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# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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(NASA-CR-141803) RESULTS OF A 0.03-SCALE  
AERODYNAMIC CHARACTERISTICS INVESTIGATION OF  
A BOEING 747 CARRIER (MODEL NO. AX 1319 I-1)  
MATED WITH A SPACE SHUTTLE ORBITER (MODEL  
45-0) CONDUCTED IN THE BOEING TRANSONIC WIND G3/18

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Unclas  
42995

SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANAGEMENT services

SPACE DIVISION  CHRYSLER  
CORPORATION



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VOLUME 2 of 3

RESULTS OF A 0.03-SCALE AERODYNAMIC CHARACTERISTICS  
INVESTIGATION OF A BOEING 747 CARRIER  
(MODEL NO. AX 1319 I-1) MATED WITH A SPACE  
SHUTTLE ORBITER (MODEL 45-0) CONDUCTED IN  
THE BOEING TRANSONIC WIND TUNNEL (CA5)

by

747 Aerodynamics, 747 Flight Controls  
and Wind Tunnel Test Group,  
Boeing Aerospace Company

Prepared under NASA Contract Number NAS9-13247

by

Data Management Services  
Chrysler Corporation Space Division  
New Orleans, La. 70189

for

Engineering Analysis Division  
Johnson Space Center  
National Aeronautics and Space Administration  
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number: BTWT 1431  
NASA Series Number: CA5  
Model Number: AX 1319 I-1 (Carrier), 45-0 (Orbiter)  
Test Dates: September 20 through September 30, 1974  
Occupancy Hours: 65.3

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Chrysler Corporation Space Division assumes no responsibility for the data presented other than display characteristics.

RESULTS OF A 0.03-SCALE AERODYNAMIC CHARACTERISTICS  
INVESTIGATION OF A BOEING 747 CARRIER  
(MODEL NO. AX 1319 I-1) MATED WITH A SPACE  
SHUTTLE ORBITER (MODEL 45-0) CONDUCTED IN THE  
BOEING TRANSONIC WIND TUNNEL (CA5)

by

747 Aerodynamics, 747 Flight Controls and Wind Tunnel Test Group,  
Boeing Aerospace Company

ABSTRACT

This report presents results of an experimental aerodynamic investigation of the Boeing 747/Space Shuttle Carrier aircraft conducted in the Boeing Transonic Wind Tunnel during September 1974. The objective of these tests was to determine performance, stability, and control characteristics of various carrier aircraft configurations. Aerodynamic characteristics of the carrier mated with the Orbiter, carrier alone, and Orbiter alone were investigated. Carrier support system tare and interference effects were determined.

Six-component force and moment data were recorded for the carrier and Orbiter. Buffet onset characteristics of the carrier vertical tail and horizontal tail were recorded. Angles of attack from  $-3^\circ$  through  $26^\circ$  and angles of sideslip between  $+12^\circ$  and  $-12^\circ$  were investigated at Mach numbers from 0.15 through 0.70.

This report for CA5 consists of three volumes: Volume 1 - data figures 1 to 200; Volume 2 - data figures 201 to 260; Volume 3 - tabulated source data.



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FIGURE NUMBER	TITLE		COEFFICIENT SCHEDULE	PAGES
FIG. 128	747 + ORB (8 DEG) + TIP FINS + SP45, FLAPS 20 LAUNCH, ALPHAI = 6 DEG	ORB	C	485-487
FIG. 129	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPHAI = 2 DEG	TOTAL	C	488-490
FIG. 130	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPHAI = 2 DEG	747	D	491-493
FIG. 131	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPHAI = 2 DEG	ORB	C	494-496
FIG. 132	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPHAI = 6 DEG	TOTAL	C	497-499
FIG. 133	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPHAI = 6 DEG	747	D	500-502
FIG. 134	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPHAI = 6 DEG	ORB	C	503-505
FIG. 135	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPI = 6, RUD = 10/10	TOTAL	C	506-508
FIG. 136	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPI = 6, RUD = 10/10	747	D	509-511
FIG. 137	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPI = 6, RUD = 10/10	ORB	C	512-514
FIG. 138	747 + ORB (8 DEG) + TIP FINS, FLAPS UP LAUNCH, ALPHAI = 6 DEG	TOTAL	C	515-517

# INDEX OF DATA FIGURES (Continued)

FIGURE NUMBER	TITLE		COEFFICIENT SCHEDULE	PAGES
FIG. 139	747 + ORB (8 DEG) + TIP FINS, FLAPS UP LAUNCH, ALPHAI = 6 DEG	747	D	518-520
FIG. 140	747 + ORB (8 DEG) + TIP FINS, FLAPS UP LAUNCH, ALPHAI = 6 DEG	ORB	C	521-523
FIG. 141	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPHAI = 6, TC OFF	TOTAL	C	524-526
FIG. 142	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPHAI = 6, TC OFF	747	D	527-529
FIG. 143	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPHAI = 6, TC OFF	ORB	C	530-532
FIG. 144	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPUP LNCH, ALP = 6, TC OFF, R = 10/10	TOTAL	C	533-535
FIG. 145	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPUP LNCH, ALP = 6, TC OFF, R = 10/10	747	D	536-538
FIG. 146	747 + ORB (8 DEG) + TIP FINS + STD SPD BRK, FLAPUP LNCH, ALP = 6, TC OFF, R = 10/10	ORB	C	539-541
FIG. 147	747 + ORB (10 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPHAI = 6 DEG	TOTAL	C	542-544
FIG. 148	747 + ORB (10 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPHAI = 6 DEG	747	D	545-547
FIG. 149	747 + ORB (10 DEG) + TIP FINS + STD SPD BRK, FLAPS UP LAUNCH, ALPHAI = 6 DEG	ORB	C	548-550

# INDEX OF DATA FIGURES (Continued)

FIGURE NUMBER	TITLE		COEFFICIENT SCHEDULE	PAGES
FIG. 150	747 + ORB (8 DEG) + STD SP, VERT TAIL OFF, FLAP UP LNCH, ALPHAI = 6, TC OFF	TOTAL	C	551-553
FIG. 151	747 + ORB (8 DEG) + STD SP, VERT TAIL OFF, FLAP UP LNCH, ALPHAI = 6, TC OFF	747	D	554-556
FIG. 152	747 + ORB (8 DEG) + STD SP, VERT TAIL OFF, FLAP UP LNCH, ALPHAI = 6, TC OFF	ORB	C	557-559
FIG. 153	747 + ORB (8 DEG) + TIP FINS + STD SP, FLAPS UP LNCH, ALPI = 6, ORB ELEV = 5	TOTAL	C	560-562
FIG. 154	747 + ORB (8 DEG) + TIP FINS + STD SP, FLAPS UP LNCH, ALPI = 6, ORB ELEV = 5	747	D	563-565
FIG. 155	747 + ORB (8 DEG) + TIP FINS + STD SP, FLAPS UP LNCH, ALPI = 6, ORB ELEV = 5	ORB	C	566-568
FIG. 156	747 + ORB (8 DEG) + STD SP, VERT TAIL OFF, FLAPS UP, ALPI = 2, DE = 0/0 (S = -1)	TOTAL	C	569-571
FIG. 157	747 + ORB (8 DEG) + STD SP, VERT TAIL OFF, FLAPS UP, ALPI = 2, DE = 0/0 (S = -1)	747	D	572-574
FIG. 158	747 + ORB (8 DEG) + STD SP, VERT TAIL OFF, FLAPS UP, ALPI = 2, DE = 0/0 (S = -1)	ORB	C	575-577
FIG. 159	747 + ORB (8 DEG) + STD SP, VERT TAIL OFF, FLAPS UP, ALPI = 6, DE = 0/0 (S = -1)	TOTAL	C	578-580
FIG. 160	747 + ORB (8 DEG) + STD SP, VERT TAIL OFF, FLAPS UP, ALPI = 6, DE = 0/0 (S = -1)	747	D	581-583

# INDEX OF DATA FIGURES (Continued)

FIGURE NUMBER	TITLE		COEFFICIENT SCHEDULE	PAGES
FIG. 161	747 + ORB (8 DEG) + STD SP, VERT TAIL OFF, FLAPS UP, ALPI = 6, DE = 0/0 (S = -1)	ORB	C	584-586
FIG. 162	747 + ORB (8 DEG) + STD SP, VERT TAIL OFF, FLAPS UP, ALPI = 6, DE = 0/0 (S = +1)	TOTAL	C	587-589
FIG. 163	747 + ORB (8 DEG) + STD SP, VERT TAIL OFF, FLAPS UP, ALPI = 6, DE = 0/0 (S = +1)	747	D	590-592
FIG. 164	747 + ORB (8 DEG) + STD SP, VERT TAIL OFF, FLAPS UP, ALPI = 6, DE = 0/0 (S = +1)	ORB	C	593-595
FIG. 165	747 + ORB (4 DEG), VERT TAIL OFF, FLAPS UP FERRY, ALPHAI = 2 (S = -2)	TOTAL	C	596-598
FIG. 166	747 + ORB (4 DEG), VERT TAIL OFF, FLAPS UP FERRY, ALPHAI = 2 (S = -2)	747	D	599-601
FIG. 167	747 + ORB (4 DEG), VERT TAIL OFF, FLAPS UP FERRY, ALPHAI = 2 (S = -2)	ORB	C	602-604
FIG. 168	747 + ORB (4 DEG), VERT TAIL OFF, FLAPS UP FERRY, ALPHAI = 6 (S = -2)	TOTAL	C	605-607
FIG. 169	747 + ORB (4 DEG), VERT TAIL OFF, FLAPS UP FERRY, ALPHAI = 6 (S = -2)	747	D	608-610
FIG. 170	747 + ORB (4 DEG), VERT TAIL OFF, FLAPS UP FERRY, ALPHAI = 6 (S = -2)	ORB	C	611-613
FIG. 171	747 + ORB (4 DEG), BASIC TAIL, FLAPS UP FERRY, ALPHAI = 8 (S = -2)	TOTAL	C	614-616

# INDEX OF DATA FIGURES (Continued)

FIGURE NUMBER	TITLE		COEFFICIENT SCHEDULE	PAGES
FIG. 172	747 + ORB (4 DEG), BASIC TAIL, FLAPS UP FERRY, ALPHAI = 8 (S = -2)	747	D	617-619
FIG. 173	747 + ORB (4 DEG), BASIC TAIL, FLAPS UP FERRY, ALPHAI = 8 (S = -2)	ORB	C	620-622
FIG. 174	747 + ORB (4 DEG), BASIC TAIL, FLAPS UP FERRY, ALPHAI = 2 (S = -3.2)	TOTAL	C	623-625
FIG. 175	747 + ORB (4 DEG), BASIC TAIL, FLAPS UP FERRY, ALPHAI = 2 (S = -3.2)	747	D	626-628
FIG. 176	747 + ORB (4 DEG), BASIC TAIL, FLAPS UP FERRY, ALPHAI = 2 (S = -3.2)	ORB	C	629-631
FIG. 177	747 + ORB (4 DEG), BASIC TAIL, FLAPS UP FERRY, ALPHAI = 6 (S = -3.2)	TOTAL	C	632-634
FIG. 178	747 + ORB (4 DEG), BASIC TAIL, FLAPS UP FERRY, ALPHAI = 6 (S = -3.2)	747	D	635-637
FIG. 179	747 + ORB (4 DEG), BASIC TAIL, FLAPS UP FERRY, ALPHAI = 6 (S = -3.2)	ORB	C	638-640
FIG. 180	747 + ORB (4 DEG), BASIC TAIL, FLAPS UP FERRY, ALPHAI = 8 (S = -3.2)	TOTAL	C	641-643
FIG. 181	747 + ORB (4 DEG), BASIC TAIL, FLAPS UP FERRY, ALPHAI = 8 (S = -3.2)	747	D	644-646
FIG. 182	747 + ORB (4 DEG), BASIC TAIL, FLAPS UP FERRY, ALPHAI = 8 (S = -3.2)	ORB	C	647-649

# INDEX OF DATA FIGURES (Continued)

FIGURE NUMBER	TITLE		COEFFICIENT SCHEDULE	PAGES
FIG. 183	747 + ORB (4 DEG) + TIP FINS, FLAPS UP FERRY, ALPHAI = 2 (S = -3.2)	TOTAL	C	650-652
FIG. 184	747 + ORB (4 DEG) + TIP FINS, FLAPS UP FERRY, ALPHAI = 2 (S = -3.2)	747	D	653-655
FIG. 185	747 + ORB (4 DEG) + TIP FINS, FLAPS UP FERRY, ALPHAI = 2 (S = -3.2)	ORB	C	656-658
FIG. 186	747 + ORB (4 DEG) + TIP FINS, FLAPS UP FERRY, ALPHAI = 6 (S = -3.2)	TOTAL	C	659-661
FIG. 187	747 + ORB (4 DEG) + TIP FINS, FLAPS UP FERRY, ALPHAI = 6 (S = -3.2)	747	D	662-664
FIG. 188	747 + ORB (4 DEG) + TIP FINS, FLAPS UP FERRY, ALPHAI = 6 (S = -3.2)	ORB	C	665-667
FIG. 189	747 + ORB (4 DEG) + TIP FINS, FLAPS UP FERRY, ALPHAI = 8 (S = -3.2)	TOTAL	C	668-670
FIG. 190	747 + ORB (4 DEG) + TIP FINS, FLAPS UP FERRY, ALPHAI = 8 (S = -3.2)	747	D	671-673
FIG. 191	747 + ORB (4 DEG) + TIP FINS, FLAPS UP FERRY, ALPHAI = 8 (S = -3.2)	ORB	C	674-676
FIG. 192	747 + ORB (4 DEG) + TIP FINS, FLAPS UP FERRY, ALPHAI = 6 (S = -2)	TOTAL	C	677-679
FIG. 193	747 + ORB (4 DEG) + TIP FINS, FLAPS UP FERRY, ALPHAI = 6 (S = -2)	747	D	680-682

# INDEX OF DATA FIGURES (Continued)

FIGURE NUMBER	TITLE		COEFFICIENT SCHEDULE	PAGES
FIG. 194	747 + ORB (4 DEG) + TIP FINS, FLAPS UP FERRY, ALPHA I = 6 (S = -2)	ORB	C	683-685
FIG. 195	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 6, RUDDER = 10/10	TOTAL	C	686-688
FIG. 196	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 6, RUDDER = 10/10	747	D	689-691
FIG. 197	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 6, RUDDER = 10/10	ORB	C	692-694
FIG. 198	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 2, RUDDER = 10/10	TOTAL	C	695-697
FIG. 199	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 2, RUDDER = 10/10	747	D	698-700
FIG. 200	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 2, RUDDER = 10/10	ORB	C	701-703
<u>VOLUME 2</u>				
FIG. 201	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 8, RUDDER = 10/10	TOTAL	C	704-706
FIG. 202	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 8, RUDDER = 10/10	747	D	707-709
FIG. 203	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 8, RUDDER = 10/10	ORB	C	710-712
FIG. 204	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 6, RUDDER = 10/10	TOTAL	C	713-715



# INDEX OF DATA FIGURES (Continued)

FIGURE NUMBER	TITLE		COEFFICIENT SCHEDULE	PAGES
FIG. 205	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 6, RUDDER = 10/10	747	D	716-718
FIG. 206	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 6, RUDDER = 10/10	ORB	C	719-721
FIG. 207	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 6, TAIL CONE OFF	TOTAL	C	722-724
FIG. 208	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 6, TAIL CONE OFF	747	D	725-727
FIG. 209	747 + ORB (4 DEG) + TIP FINS, FLAPS UP, ALPHA I = 6, TAIL CONE OFF	ORB	C	728-730
FIG. 210	ORBITER ALONE, TAIL CONE OFF, ALPHA I = 8 DEG		C	731-733
FIG. 211	ORBITER ALONE, TAIL CONE OFF, ALPHA I = 15 DEG		C	734-736
FIG. 212	ORBITER ALONE, TAIL CONE ON, ALPHA I = 8 DEG		C	737-739
FIG. 213	ORBITER ALONE, TAIL CONE ON, ALPHA I = 15 DEG		C	740-742
FIG. 214	747 ALONE, EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP		A	743-750
FIG. 215	747 + ORB (8 DEG), EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP		A	751-766
FIG. 216	BASIC 747 + ORB (10 DEG), EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20		A	767-778
FIG. 217	747 ALONE, EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20		A	779-782

# INDEX OF DATA FIGURES (Continued)

FIGURE NUMBER	TITLE	COEFFICIENT SCHEDULE	PAGES
FIG. 218	747 + ORB (10 DEG), EFFECT OF STD BRAKES OR FULL 45 SPOILERS, FLAPS 20	A	783-794
FIG. 219	747 + ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION	A	795-810
FIG. 220	747 + ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION	A	811-822
FIG. 221	747 + ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION	A	823-838
FIG. 222	747 + ORB (4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.	A	839-854
FIG. 223	747 + ORB (8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.	A	855-870
FIG. 224	747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP	A	871-890
FIG. 225	747 + ORB (4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY	A	891-906
FIG. 226	747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20	A	907-922
FIG. 227	747 + ORB (10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH	A	923-934
FIG. 228	747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP	A	935-950
FIG. 229	747 ALONE, STABILIZER EFFECT, FLAPS UP	A	951-970
FIG. 230	747 + ORB (8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH	A	971-990
FIG. 231	747 + ORB (4 DEG), STABILIZER EFFECT, FLAPS UP FERRY	A	991-1010

# INDEX OF DATA FIGURES (Continued)

FIGURE NUMBER	TITLE	COEFFICIENT SCHEDULE	PAGES
FIG. 232	747 + ORB (10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH	A	1011-1022
FIG. 233	747 ALONE, ELEVATOR EFFECT FLAPS UP	A	1023-1026
FIG. 234	747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP	E	1027-1040
FIG. 235	747 ALONE, RUDDER EFFECT (BETA = 0), FLAPS UP	E	1041-1047
FIG. 236	747 + ORB (8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH	A	1048-1063
FIG. 237	747 + ORB (8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF	A	1064-1079
FIG. 238	747 + ORB (4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY	A	1080-1095
FIG. 239	747 ALONE, ELEVATOR EFFECT, FLAPS 20	A	1096-1099
FIG. 240	747 + ORB (8 DEG), EFFECT OF ORBITER ELEVON, FLAPS UP	A	1100-1107
FIG. 241	747 + ORB (8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF	A	1108-1123
FIG. 242	BASIC 747 + ORB (4 DEG), STABILIZER EFFECT, FLAPS UP FERRY	A	1124-1139
FIG. 243	747 + ORB, EFFECT OF FLAPS ON LAUNCH CONFIG.	A	1140-1151
FIG. 244	747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP	C	1152-1166
FIG. 245	747 + ORB (4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY	C	1167-1181
FIG. 246	747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20	C	1182-1190
FIG. 247	747 + ORB (10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH	C	1191-1199

# INDEX OF DATA FIGURES (Continued)

FIGURE NUMBER	TITLE	COEFFICIENT SCHEDULE	PAGES
FIG. 248	747 ALONE, RUDDER EFFECT WITH ORB SUPPORTS, FLAPS UP, ALPHA I = 6 DEG	C	1200-1205
FIG. 249	747 + ORB (4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA I = 6 DEG	C	1206-1217
FIG. 250	747 + ORB (4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY	C	1218-1232
FIG. 251	747 + ORB (8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA I = 6 DEG	C	1233-1244
FIG. 252	747 + ORB (8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA I = 6	C	1245-1256
FIG. 253	747 + ORB (8 DEG), EFFECT OF ORB ELEVONS, FLAPS UP LAUNCH	C	1257-1262
FIG. 254	747 + ORB (4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY	C	1263-1274
FIG. 255	747 + ORB (8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH	C	1275-1286
FIG. 256	747 + ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH	C	1287-1298
FIG. 257	747 + ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH	C	1299-1307
FIG. 258	747 + ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY	C	1308-1319
FIG. 259	747 + ORB (10 DEG), RUDDER EFFECT, FLAPS 20 LAUNCH, ALPHA I = 6 DEG	C	1320-1328
FIG. 260	747 + ORB (10 DEG), EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20	C	1329-1337

## INDEX OF DATA FIGURES (Concluded)

### COEFFICIENT SCHEDULE:

- A: CL vs. ALPHAW; CL vs. CD; CL, ALPHAW vs. CLM
- B: DCL vs. ALPHAW; DCL vs. DCD; DCL, ALPHAW vs. DCLM
- C: CY, CLN, CSL vs. BETA
- D: DCY, DCLN, DCSL vs. BETA
- E: CL vs. ALPHAW; CL vs. CD; CL, ALPHAW vs. CLM;  
CY, CLN, CSL vs. ALPHAW
- F: CL vs. ALPHA; CL vs. CD; CL, ALPHA vs. CLM

# NOMENCLATURE General

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
a		speed of sound; m/sec, ft/sec
C <sub>p</sub>	CP	pressure coefficient; $(p_1 - p_\infty)/q$
M	MACH	Mach number; $V/a$
p		pressure; N/m <sup>2</sup> , psf
q	Q(NSM) Q(PSF)	dynamic pressure; $1/2\rho V^2$ , N/m <sup>2</sup> , psf
RN/L	RN/L	unit Reynolds number; per m, per ft
V		velocity; m/sec, ft/sec
$\alpha$	ALPHA	angle of attack, degrees
$\beta$	BETA	angle of sideslip, degrees
$\psi$	PSI	angle of yaw, degrees
$\phi$	PHI	angle of roll, degrees
$\rho$		mass density; kg/m <sup>3</sup> , slugs/ft <sup>3</sup>

## Reference & C.G. Definitions

Ab		base area; m <sup>2</sup> , ft <sup>2</sup>
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
$\frac{l}{c}$ <sub>REF</sub>	LREF	reference length or wing mean aerodynamic chord; m, ft
S	SREF	wing area or reference area; m <sup>2</sup> , ft <sup>2</sup>
	MRP	moment reference point
	XMRP	moment reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z axis

## SUBSCRIPTS

b	base
l	local
s	static conditions
t	total conditions
$\infty$	free stream

# NOMENCLATURE (Continued)

## Body-Axis System

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
$C_N$	CN	normal-force coefficient; $\frac{\text{normal force}}{qS}$
$C_A$	CA	axial-force coefficient; $\frac{\text{axial force}}{qS}$
$C_Y$	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
$C_{A_b}$	CAB	base-force coefficient; $\frac{\text{base force}}{qS}$ $-A_b(p_b - p_\infty)/qS$
$C_{A_f}$	CAF	forebody axial force coefficient, $C_A - C_{A_b}$
$C_m$	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS l_{REF}}$
$C_n$	CYN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qS b}$
$C_l$	CBL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qS b}$

## Stability-Axis System

$C_L$	CL	lift coefficient; $\frac{\text{lift}}{qS}$
$C_D$	CD	drag coefficient; $\frac{\text{drag}}{qS}$
$C_{D_b}$	CDB	base-drag coefficient; $\frac{\text{base drag}}{qS}$
$C_{D_f}$	CDF	forebody drag coefficient; $C_D - C_{D_b}$
$C_Y$	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
$C_m$	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS l_{REF}}$
$C_n$	CLN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qS b}$
$C_l$	CSL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qS b}$
$L/D$	L/D	lift-to-drag ratio; $C_L/C_D$
$L/D_f$	L/DF	lift to forebody drag ratio; $C_L/C_{D_f}$

NOMENCLATURE (Continued)  
Additions to Standard List

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
BSTA		carrier fuselage station, in.
BWL		carrier water line, in.
FS		fuselage station, in.
$i_{ORB}$	IORB	Orbiter incidence angle, deg.
MS		model station, in.
$S_{i-j}$	Si-j	spoiler nos. i through j deflection angle, deg.
WL		waterline, in.
WP		water plane, in.
Xc	XC	carrier longitudinal station, in.
Xo	XO	Orbiter longitudinal station, in.
Yc	YC	carrier lateral station, in.
Yo	YO	Orbiter lateral station, in.
Zc	ZC	carrier vertical station, in.
Zo	ZO	Orbiter vertical station, in.
$\alpha_c$	ALPHAC	carrier fuselage angle of attack, deg.
$\alpha_0$	ALPHA	Orbiter angle of attack, $\alpha_0 = i_{ORB} - 2^\circ + \alpha_w + \Delta i_{ORB}$ , deg.
$\alpha_w$	ALPHAW	carrier wing angle of attack, $\alpha_w = \alpha_c + 2^\circ$ , deg.
$\beta_c$	BETA	carrier sideslip angle, deg.
$\beta_0$	BETA	Orbiter sideslip angle, deg.



NOMENCLATURE (Continued)  
Additions to Standard List

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
$\delta C_L$	DCL	incremental lift force coefficient (stability axis), DCL
$\delta C_D$	DCD	incremental drag force coefficient (stability axis), DCD
$\delta C_m$	DCLM	incremental pitching moment coefficient (stability axis), DCLM
$\delta C_Y$	DCY	incremental side force coefficient (stability axis), DCY
$\delta C_n$	DCLN	incremental yawing moment coefficient (stability axis), DCLN
$\delta C_\ell$	DCSL	incremental rolling moment coefficient (stability axis), DCSL
$\delta e$	ORBELV	Orbiter elevator deflection angle, ORBELV, deg.
$\alpha_I$	ALPHAI	nominal value of ALPHAW, ALPHAI ALPHAI = ALPHAW - sting balance correction
$CL_T$	CL-T	main balance strut tare lift force coefficient, CL-T
$CD_T$	CD-T	main balance strut tare drag force coefficient, CD-T
$C_{mT}$	CLM-T	main balance strut tare pitching moment coefficient, CLM-T
$C_{YT}$	CY-T	main balance strut tare side force coefficient, CY-T
$C_{nT}$	CLN-T	yawing moment coefficient, CLN-T
$C_{\ell T}$	CSL-T	main balance strut tare rolling moment coefficient, CSL-T

NOMENCLATURE (Concluded)  
Additions to Standard List

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
$\Delta i_{ORB}$	DIORB	change in Orbiter incidence due to support strut and balance deflections, deg.
$\delta a_{IL}$	AIL-IL	carrier left inboard aileron deflection angle, deg.
$\delta a_{IR}$	AIL-IR	carrier right inboard aileron deflection angle, deg.
$\delta a_{OL}$	AIL-OL	carrier left outboard aileron deflection angle, deg.
$\delta a_{OR}$	AIL-OR	carrier right outboard aileron deflection angle, deg.
$\delta a$	AILRON	Orbiter aileron deflection angle, deg.
$\delta e_{IB}$	ELV-IB	carrier inboard elevator deflection, deg.
$\delta e_{OB}$	ELV-OB	carrier outboard elevator deflection, deg.
$\delta e$	ELEVON	Orbiter elevon deflection angle, deg.
$\delta_{BF}$	BDFLAP	Orbiter body flap deflection angle, deg.
$\delta_{RL}$	RUD-L	carrier lower rudder panel deflection angle, deg.
$\delta_{RU}$	RUD-U	carrier upper rudder panel deflection angle, deg.
$\delta_R$	RUDDER	Orbiter rudder deflection angle, deg.
$\delta_{SB}$	SPDBRK	Orbiter speedbrake deflection angle, deg.
$\delta_{WPP}$	STAB	carrier horizontal stabilizer deflection angle, deg.

## CONFIGURATIONS INVESTIGATED

The test articles were 0.030-scale representations of the Boeing 747 carrier and Space Shuttle Orbiter vehicles. The carrier and Orbiter were tested both alone and mated. Carrier alone testing included a strut tare and interference investigation which utilized a dummy support strut. The BTWT external balance measured total force and moment data for the mated vehicle and carrier forces and moments for carrier alone testing. Orbiter forces and moments were measured by a six-component internal balance (660) mounted in the Orbiter.

The carrier model (no. AX 1319 I-1) represented the NASA 905 carrier aircraft which is a Boeing 747-100 aircraft with 200 ft.<sup>2</sup> vertical tip fins on the horizontal tail. Configuration designations used were:

$$K_1 = B_{27.8} M_{26.8}^{25} N_{57}^{58} T_{19} W_{44.1}$$

$$F_{20} = F_{8.1}^{20} F_{8.2}^{20} J_{11.10.2}^{60} J_{13.8.1}^{50} L_{9.8.3}^{70}$$

$B_{27.8}$	fuselage
$F_o$	all flaps retracted at 0° deflection
$F_{8.1}^{20}$	inboard flaps deflected 20°
$F_{8.2}^{20}$	outboard flaps deflected 20°
$H_{15.1A}$	basic horizontal tail
$H_{15.6}$	horizontal tail with 200 ft. <sup>2</sup> vertical tip fins
IS	image strut for support strut tare and interference studies
$J_{11.10.2}^{60}$	mid-span leading edge flaps deflected 60°
$J_{13.8.1}^{50}$	outboard leading edge flaps deflected 50°

# CONFIGURATIONS INVESTIGATED (Continued)

L <sup>70</sup> <sub>9.8.3</sub>	inboard leading edge Kruegers deflected 70°
M <sub>25</sub>	inboard nacelle struts
M <sub>26.8</sub>	outboard nacelle struts
N <sub>57</sub>	inboard nacelle
N <sub>58</sub>	outboard nacelle
S <sub>1-12</sub>	spoilers
T <sub>19</sub>	flap track fairing
V <sub>9.1</sub>	vertical tail
W <sub>44.1</sub>	wing

The Orbiter model (no. 45-0) represented the space shuttle Orbiter configuration 140A/B lines. The following configuration designations were used:

ORB = AT<sub>39</sub> B<sub>26</sub> M<sub>16</sub> R<sub>5</sub> V<sub>8</sub> W<sub>116</sub> E<sub>44</sub>

AT <sub>38</sub>	Orbiter/carrier forward support strut
AT <sub>39</sub>	Orbiter/carrier aft support strut
B <sub>26</sub>	fuselage
M <sub>16</sub>	OMS pods
N <sub>24</sub>	MPS nozzles
N <sub>28</sub>	OMS nozzles
R <sub>5</sub>	rudder

# CONFIGURATIONS INVESTIGATED (Concluded)

TC<sub>5</sub> tail cone fairing

V<sub>8</sub> vertical tail

W<sub>116</sub> wing

E<sub>44</sub> slotted elevon

C<sub>9</sub> canopy

F<sub>8</sub> body flap

## TEST FACILITY DESCRIPTION

The Boeing Transonic Wind Tunnel (BTWT) is a continuous flow, closed circuit, single return, atmospheric facility with the following characteristics:

Test Section Flow Parameters		Test Section Dimensions	
Freestream Condition	Range	Description	Value
Mach number	0 thru 1.15	Cross-section (minus corner fillets), ft.	8 x 12
Dynamic pressure, psia	0 thru 6.3	Length, ft.	14.5
Static pressure, psia	15 to 5.4	Area, ft <sup>2</sup>	88
Stagnation pressure	atmospheric		
Maximum unit Reynolds number, per foot	$4 \times 10^6$		
Maximum total temperature, °F	160		

The test section can be operated with either solid or slotted walls.

The slotted wall configuration consists of 16 slots which can vary wall porosity from 3.5% to 11%.

Test data acquisition, recording, computations, and display are done by an XDS-9300 computer and Astro data sub-system.

## DATA REDUCTION

Aerodynamic forces and moments measured by the external balance were reduced to coefficient form in body and stability axis systems, utilizing carrier reference dimensions:

<u>Symbol</u>	<u>Description</u>	<u>Model Scale</u>	<u>Full Scale</u>
S	747 wing area, ft. <sup>2</sup>	4.95	5500
b	747 wing span, in.	70.44	2348
$\bar{c}$	747 wing mean aerodynamic chord, in.	9.834	327.8
X <sub>MRP</sub>	747 longitudinal moment reference point, in. X <sub>c</sub>	40.197	1339.91
Y <sub>MRP</sub>	747 lateral moment reference point, in. Y <sub>c</sub>	0.0	0.0
Z <sub>MRP</sub>	747 vertical moment reference point, in. Z <sub>c</sub>	5.7225	190.75

Aerodynamic forces and moments measured by the internal balance were reduced to coefficient form in body and stability axis systems utilizing both the carrier reference dimensions (described above) to create one set of data, and Orbiter reference dimensions to create a second set of data. Orbiter reference dimensions are:

<u>Symbol</u>	<u>Description</u>	<u>Model Scale</u>	<u>Full Scale</u>
S	Orbiter wing area, ft. <sup>2</sup>	2.42	2690
b	Orbiter wing span, in.	28.10	936.68
$\bar{c}$	Orbiter wing mean aerodynamic chord, in.	14.244	474.81
X <sub>MRP</sub>	Orbiter longitudinal moment reference point, in. X <sub>0</sub>	33.270	1109.0

# DATA REDUCTION (Concluded)

		<u>Model Scale</u>	<u>Full Scale</u>
$Y_{MRP}$	Orbiter lateral moment reference point, in. $Y_0$	0.0	0.0
$Z_{MRP}$	Orbiter vertical moment reference point, in. $Z_0$	11.25	375.0

Support strut tare and interference corrections were applied to carrier data. These corrections (datasets RGMC01-RGMC18), were obtained by subtracting image strut in minus image strut out datasets (RGM001-RGM038).

Table IV summarizes the data set notation used for different types of data.



TABLE I

[illegible]

TABLE II.

TABLE 1.										DATE: 7-1-75								
TEST: BTWT 1431 CA-5		DATA SET/RUN NUMBER COLLATION SUMMARY																
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES										MACH NUMBERS				
		$\alpha$	$\beta$	STAB	RUD-U/L	ELV-IB/OB	S <sub>1,2</sub>	S <sub>3,4</sub>	S <sub>5-8</sub>	IORB				.15	.30	.50	.60	.70
RGM001	K <sub>1</sub> + F <sub>0</sub> H <sub>15.1A</sub> V <sub>9.1</sub> + IS	1A	0	-2	0	9/3	0	0	0	—				31	17	16	15	13
02		2	△	-2	0										18	19	20	21
03		6	△	-2	0									30	25	24	23	22
04	Y	8	△	-2	0	Y									29	28	27	26
05	K <sub>1</sub> + F <sub>0</sub> V <sub>9.1</sub> + IS	1A	0	—	0	—								34	38	37	36	35
06	K <sub>1</sub> + F <sub>0</sub> H <sub>15.1A</sub> + IS	2	△	-2	—	0/3									42	41	40	39
07		6	△	-2	—									47	46	45	44	43
08	Y	8	△	-2	—										51	50	49	48
09	K <sub>1</sub> + H <sub>15.1A</sub> F <sub>20</sub> + IS	4	△	+1	—										57	56	55	54
10		4	△	+1	—										61	60	59	58
11		6	△	+1	—										65	64	63	62
12	Y	8	△	+1	—	Y									69	68	67	66
13	K <sub>1</sub> + F <sub>20</sub> V <sub>9.1</sub> + IS	1A	0	—	0	—									73	72	71	70
14	K <sub>1</sub> + F <sub>20</sub> H <sub>15.1A</sub> V <sub>9.1</sub> + IS	1A	0	+1	0	0/3								91	77/78	76	75/90	74
15		34	△	+1	0													79
16		4.25	△	+1	0										83	82	81/85	80
17		6	△	+1	0										89	88	87	86
Y 18	Y	8	△	+1	0	Y	Y	Y	Y	Y					95	94	93	92

INVERTED

TEST RUN NUMBERS

17

75

61

55

49

43

37

31

25

19

13

7

1

CL

CD

CLM

CY

CLN

CSL

DIORB

DCL

DCD

DCLM

DCY

DCLN

DCSL

CLT

MACH

ALPHAW

CDT

CLMT

CYT

CLNT

CSLT

FOR R SEC

$\alpha = \alpha_W = \Delta = 1A \rightarrow -2 \rightarrow 12, \Delta = 1^0$

COEFFICIENTS

$\alpha = \alpha_{INV} = 1A \rightarrow 3 \rightarrow 21, \Delta = 1^0$

\* FOR A DATASETS

$\beta = \Delta = -12, -10, -8, -6, -4, -3, -2, -1, 0, 1, 2, 3, 4, 6, 8, 10, 12$

$K_1 = W + 4.1 B_{27.8} M_{25.8} N_{27} T_{19} + TS \# 6.2$

$F_{20} = F_{2.1}^{20} F_{2.2}^{20} J_{11.10.2}^{60} J_{13.8.1}^{50} L_{9.8.3}^{70}$

VERT TIP FINS : V<sub>9.1</sub> = VERT. TAIL ; AT<sub>38</sub> = ORB/CARR. SUPPORT ST

α OR β

SCHEDULES

IDVAR 11

IDVAR 12

IDV

F<sub>0</sub> = FLAPS RETRACTED 0°; H<sub>15.1A</sub> = BASIC HORIZ. TAIL; H<sub>15.6</sub> = HORIZ. TAIL W/200 FC<sup>2</sup> VERT. TIP FINS; V<sub>9.1</sub> = VERT. TAIL; AT<sub>28</sub> = ORB/CARR. SUPPORT STRUTS  
 TC<sub>5</sub> = TAIL CONE FAIRING; N<sub>28</sub> = OMS NOZZLES; N<sub>24</sub> = MRS NOZZLES; IS = IMAGE STRUTS; S = SPOILER DEFLECTIONS; IORB = ORB. INCIDENCE;  
 STAB = STAB. DEFLECTION; RUD-U/L = RUDDER DEFLECTION; ELV-IB/OB = ELEV. DEFLECTION



TABLE II. - Continued.

TEST: BTWT 143/ CA-5			DATA SET/RUN NUMBER COLLATION SUMMARY											DATE: 7-1-75				
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES										MACH NUMBERS				
		$\alpha$	$\beta$	STAB	RUD- U/L	ELV- IB/OB	S <sub>1,2</sub> 11,12	S <sub>3,4</sub> 9,10	S <sub>5-8</sub>	IORB				.15	.3	.5	.6	.7
RGMO19	K1 F20 V9.1 H15.1A	1A	0	+1	0	0/3	0	0	0	—				102	101	100	99	98
20		4	$\Delta$	+1	0										106	105	104	103
21		6	$\Delta$	+1	0										110	109	108	107
22	Y	8	$\Delta$	+1	0	Y									114	113	112	111
23	K1 F20 V9.1	1A	0	—	0	—									119	118	117	115/116
24	K1 F20 H15.1A	4	$\Delta$	+1	—	0/3									123	122	121	120
25		6	$\Delta$	+1	—										127	126	125	124
26	Y	8	$\Delta$	+1	—										131	130	129	128
27	K1 F0 H15.1A	2	$\Delta$	+1	—										137	136	135	134
28		6	$\Delta$	+1	—									142	141	140	139	138
29	Y	8	$\Delta$	+1	—	Y									146	145	144	143
30	K1 F0 V9.1	1A	0	—	0	—								151	150	149	148	147
31	K1 F0 V9.1 H15.1A	1A	0	+1	0	0/3								156	155	154	153	152
32		1A	0	-2	0									161	160	159	158	157
33		2	$\Delta$	-2	0										165	164	163	162
34		6	$\Delta$	-2	0									170	169	168	167	166
35	Y	8	$\Delta$	-2	0										174	173	172	171
36	K1 F0 H15.1A	2	$\Delta$	-2	—	Y	Y	Y	Y	Y					178	177	176	175
7 13 19 25 31 37 43 49 55 61 67 73 76																		
COEFFICIENTS: 10 VAR 11 10 VAR 12 NDV																		
$\alpha$ OR $\beta$																		
SCHEDULES																		

TEST RUN NUMBERS

TABLE II. - Continued.

TEST: BTWT 1431 CA-5		DATA SET/RUN NUMBER COLLATION SUMMARY											DATE: 7-1-75													
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES										MACH NUMBERS												
		$\alpha$	$\beta$	STAB	RUD- U/L	ELV- E/OB	$\Sigma 1,2$ 11,12	$\Sigma 3,4$ 9,10	$\Sigma 5-8$	IORB				.15	.3	.5	.6	.7								
REM037	K1 F0 H15.1A	6	A	-2	—	0/3	0	0	0	—				183	182	181	180	179								
38	Y	8	A	-2	—	0/3									187	186	185	184								
39	K1 F0 V9.1	A	0	—	0	—								194	193	192	191	189								
40	K1 F0 V9.1 H15.1A	A	0	-2		0/3								202	201	200	199	198								
41	Y	6	A	-2										207	206	205	204	203								
42	K1 F0 V9.1 H15.6	A	0	-2										212	211	210	209	208								
43		6	A	-2										217	216	215	214	213								
44		A	0	+1				Y	Y					222	221	220	219	218								
45		A	0	+1				45	20							224	223									
46		A	+5	+1		Y										226	225									
47		A	0	+1		10/13											227									
48		A	0	+1	Y	-10/7											228									
49	Y	A	0	+1	15/15	0/3											229									
50	K1 F0 V9.1 H15.6 AT38 AT39	6	A	+1	15/15	0/3										233	232									
51		6	A	+1	0	0/3										236	235	234								
52	Y	A	0	+1	0	0/3									240	239	238	237								
53	K1 F0 V9.1 H15.6 AT38.1 AT39	A	0	+1	0	0/3	Y	Y	Y						244	243	242	241								
54	K1 F0 V9.1 H15.6	A	0	-1.9	0	0/3	0	45	20	Y						246	245									
													13	19	25	31	37	43	49	55	61	67	73	76		
													COEFFICIENTS										CLAR 11		CLAR 12	ND 1
$\alpha$ OR $\beta$																										
SCHEDULES																										

INVERTED

40

TEST RUN NUMBERS



TABLE II. - Continued.

TEST: BTWT 1431 CA-5			DATA SET/RUN NUMBER COLLATION SUMMARY										DATE: 7-1-75					
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES										MACH NUMBERS				
		$\alpha$	$\beta$	STAB	RUB- U/L	ELV- FB/OB	S1,2 11,12	S3,4 9,10	S5-8	IORB				.15	.3	.5	.6	.7
RG055	K1 F0 H15.1 A	6	A	-1.9	—	0/3	0	0	0	—				251	250	249	248	247
56	K1 F20 H15.1 A	6	A	+1	—	0/3										255	254	253
57	K1 F20 H15.1A V9.1	6	A	+1	0	0/3									259	258	257	256
58	Y	A	0	+1	0	0/3								264	263	262/265	261	260
59	K1 F20 H15.6 V9.1	A	0	+1	0	0/3								269		268	267	266
60		6	A	+1	0	0/3	Y	Y	Y							272	271	270
61		A	0	+1	0	0/3	45	45	45							273		
62	Y	A	0	+1	0	10/13				Y						274		
63	K1 F20 H15.6 V9.1 + ORB	A	0	+1	0	10/13				9.7						277	278	279
64	+ TC5 + AT 38.1	A	0	+1	0	10/13										282	281	280
65		A	0	+1	0	0/3											284	283
66		A	0	+1	0	0/3										285		
67		6	A	+1	0	0/3										288	287	286
68		A	0	-2	0	0/3										291	290	289
69		6	A	+1	10/10	0/3	Y		Y							296	295	294
70		A	0	+1	0	0/3	0	Y	20							299	298	297
71		A	0	+1	0	0/3	0	0	0							302	301	300
Y 72	Y	8	A	+1	0	0/3	0	0	0	Y				306		305	304	303
<div>1319253137434955616773</div>																		
COEFFICIENTS																		
CLAR 11CLAR 12NDV																		
ORB= W116 B26 V8 R5 M16 AT39 E44 + TSORB																		
$\alpha$ OR $\beta$																		
SCHEDULES																		

TEST RUN NUMBERS

TABLE II. - Continued.

TEST: BTWT 1431 CA-5				DATA SET/RUN NUMBER COLLATION SUMMARY										DATE: 7-1-75				
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES										MACH NUMBERS				
		$\alpha$	$\beta$	STAB	RUP- U/L	BLV- IS/OS	S <sub>1,2</sub> H <sub>1,2</sub>	S <sub>3,4</sub> 9/10	S <sub>5-8</sub>	IORB	ORB ELV			.15	.3	.5	.6	.7
REM073	K1F20 H15.6 V9.1 + ORB + TC5 + AT38.1	6	A	+1	0	9/3	0	0	0	9.7	—			310		309	308	307
74	K1F20 H15.1A V9.1 + ORB + TC5 + AT38.1	A	0	+1	0	9/3	0	0	0	9.7						313	312	311
75		A	0	+1	0	9/3	45	45	45	9.7						316	315	314
76	Y	6	A	+1	0	9/3	45	45	45	9.7						319	318	317
77	K1F20 V9.1 + ORB + TC5 + AT38.1	A	0	—	0	—	45	45	45	9.7					323	322	321	320
78	K1F20 H15.1A + ORB + TC5 + AT38.1	6	A	+1	—	9/3	45	45	45	9.7				327		326	325	324
79	K1F20 H15.6 V9.1 + ORB + TC5 + AT38.2	6	A	+1	0	9/3	45	45	45	7.85						330	329	328
80	Y	A	0	+1	0	9/3	45	45	45	7.85						333 335	332 334	331
81	K1F0 H15.6 V9.1 + ORB + TC5 + AT38.2	A	0	+1	0	9/3	0	45	20	7.85				340	339	338	337	336
82		2	A	+1	0	9/3	0	45	20	7.85				345	344	343	342	341
83		6	A	+1	0	9/3	0	45	20	7.85				350	349	348	347	346
84		A	0	-2	0	9/3	0	45	20	7.85					354	353	352	351
85		A	0	+1	0	10/13	0	45	20	7.85					358	357	356	355
86	Y	6	A	+1	10/10	9/3	0	45	20	7.85	Y				362	361	360	359
87	K1F0 H15.6 V9.1 + ORB + TC5 + AT38.2	A	0	+1	9/0	9/3	0	45	20	7.85	5					364	363	
88		6	A	+1	9/0	9/3	0	45	20	7.85	5					366	365	
89		6	A	+1	0	9/3	0	0	0	7.85	0				370	369	368	367
Y 90	Y	A	0	+1	0	9/3	0	0	0	7.85	0				374	373	372	371
7 13 19 25 31 37 43 49 55 61 67 73 79 85 91 97 103 109 115																		
COEFFICIENTS: CLAR 11 CLAR 12 NDV																		
$\alpha$ OR $\beta$																		
SCHEDULES																		



TABLE II. - Continued.

TABLE 11. - Continued.										DATE: 7-1-75								
TEST: BTWT 1431 CA-5		DATA SET/RUN NUMBER COLLATION SUMMARY																
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES										MACH NUMBERS				
		$\alpha$	$\beta$	STAB	RUD- U/L	ELV- TS/DB	S <sub>1,2</sub> 11,12	S <sub>3,4</sub> 9,10	S <sub>5-8</sub>	IORB				.15	.3	.5	.6	.7
RG-M091	K <sub>1</sub> FoH <sub>15.6</sub> V <sub>9.1</sub> +ORB +N <sub>28</sub> +N <sub>24</sub> +AT <sub>38.2</sub>	A	0	-2	0	0/3	0	45	20	7.85					378	377	376	375
92		A	0	+1	0	0/3	0	45	20	7.85					382	381	380	379
93		6	A	+1	0	0/3	0	45	20	7.85					386	385	384	383
94		6	2	+1	10/10	0/3	0	45	20	7.85					390	389	388	387
95	Y	A	0	+1	0/0	10/13	0	45	20	7.85					394	393	392	391
96	K <sub>1</sub> FoH <sub>15.6</sub> V <sub>9.1</sub> +ORB+TC <sub>5</sub> +AT <sub>38.2</sub>	A	0	+1	0/0	0/0	0	45	20	9.7					398	397	396	395
97	Y	6	A	+1	0/0	0/0	0	45	20	9.7					402	401	400	399
98	K <sub>1</sub> FoV <sub>9.1</sub> +ORB+TC <sub>5</sub> +AT <sub>38.2A</sub>	A	0	—	0/0	—	0	45	20	7.85				407	406	405	404	403
99	K <sub>1</sub> FoV <sub>9.1</sub> +ORB+AT <sub>38.2A</sub> +N <sub>28</sub> +N <sub>24</sub>	A	0	—	0/0	—	0	45	20	7.85					411	410	409	408
100	K <sub>1</sub> FoH <sub>15.1A</sub> +ORB+AT <sub>38.2A</sub> +N <sub>28</sub> +N <sub>24</sub>	6	2	-1	—	0/0	0	45	20	7.85					415	414	413	412
101	K <sub>1</sub> FoH <sub>15.1A</sub> +ORB+TC <sub>5</sub> +AT <sub>38.2A</sub>	2	2	-1	—	0/0	0	45	20	7.85					419	418	417	416
102		6	2	-1	—	0/0	0	45	20	7.85				424	423	422	421	420
103	Y	6	2	+1	—	0/0	0	45	20	7.85				429	428	427	426	425
104	K <sub>1</sub> FoH <sub>15.1A</sub> +ORB+TC <sub>5</sub> +AT <sub>38.3</sub>	2	2	-2	—	0/3	0	0	0	4.0					435	434	433	432
105		6	2	-2	—	0/3	0	0	0	4.0				440	439	438	437	436
106	Y	8	2	-2	—	0/3	0	0	0	4.0					444	443	442	441
107	K <sub>1</sub> FoV <sub>9.1</sub> +ORB+TC <sub>5</sub> +AT <sub>38.3</sub>	A	0	—	0/0	—	0	0	0	4.0				449	448	447	446	445
108	K <sub>1</sub> FoH <sub>15.1A</sub> V <sub>9.1</sub> +ORB+TC <sub>5</sub> +AT <sub>38.3</sub>	A	0	-3.2	—	0/3	0	0	0	4.0					453	452	451	450
13 19 25 31 37 43 49 55 61 67 73 76																		
COEFFICIENTS																		
IC, AR 11 IC, AR 12																		
$\alpha$ OR $\beta$																		
SCH: RULES																		

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TEST RUN NUMBER:

TABLE II. - Continued.

TEST: BTWT 1431 CA-5		DATA SET/RUN NUMBER COLLATION SUMMARY											DATE: 7-1-75					
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES										MACH NUMBERS				
		$\alpha$	$\beta$	STAB	RUD- U/L	ELV- TS/08	S <sub>1,2</sub> 11,12	S <sub>3,4</sub> 9,10	S <sub>5,8</sub>	IORB				.15	.3	.5	.6	.7
RGM/09	K1F0H15.1AVq.1 + ORB + TC5 + AT <sub>38.3</sub>	2	A	-3.2	0	0/3	0	0	0	4.0					457	456	455	454
110		6	A	-3.2	0	0/3									461	460	459	458
111	Y	8	A	-3.2	0	0/3									465	464	463	462
112	K1F0H15.6Vq.1 + ORB + TC5 + AT <sub>38.3</sub>	A	0	-3.2	0	0/3								470	469	468	467	466
113		2	A	-3.2	0	0/3								475	474	473	472	471
114		6	A	-3.2	0	0/3								484	479	478	477	476
115		8	A	-3.2	0	0/3									483	482	481	480
116		A	0	+1	0	0/3									488	487	486	485
117		A	0	-2	0	0/3								493	492	491	490	489
118		6	A	-2	0	0/3								498	497	496	495	494
119		A	0	-2	0	10/1									502	501	500	499
120		A	0	-2	0	10/13									506	505	504	503
121		6	A	-2	10/10	0/3									509	510	508	507
122		2	A	-2	10/10	0/3									514	513	512	511
123		8	A	-2	10/10	0/3									518	517	516	515
124	Y	6	A	-2	10/10	0/3									525	524	523	522
125	K1F0H15.1AVq.1 + ORB + TC5 + AT <sub>38.3</sub>	A	0	-2	0/0	0/3									529	528	527	526
126	K1F0H15.6Vq.1 + ORB + AT <sub>38.3</sub> + N28 + N24	A	0	-2	0/0	0/3	Y	Y	Y	Y					533	532	531	530
		1 7 13 19 25 31 37 43 49 55 61 67 73 76																
		COEFFICIENTS ICV AR 11 ICV AR 12 ICV																
$\alpha$ OR $\beta$																		
SCHEDULES																		

TEST RUN NUMBERS



TABLE II. - Concluded.

[illegible]

# TABLE III. - MODEL DIMENSIONAL DATA

## a. Carrier Model

MODEL COMPONENT: B<sub>27.8</sub>

GENERAL DESCRIPTION: BODY, 747 Project with A.P.V. exit.

MODEL SCALE: 0.03

DRAWING NUMBER: 65-69716

### DIMENSIONS:

### FULL SCALE

### MODEL SCALE

Length, in.

2702

81.06

Max. Width, in.

255

7.65

Max. Depth

\_\_\_\_\_

\_\_\_\_\_

Fineness Ratio

### Area

Max. Cross-Sectional

\_\_\_\_\_

\_\_\_\_\_

Planform

\_\_\_\_\_

\_\_\_\_\_

Wetted, ft<sup>2</sup>

424

.3816

Base

\_\_\_\_\_

\_\_\_\_\_

TABLE IIIa.- Continued.

## MODEL DIMENSIONAL DATA

MODEL COMPONENT : F<sub>0</sub>GENERAL DESCRIPTION Clean WingFlaps up

DRAWING NUMBER \_\_\_\_\_

DIMENSIONS	FULL SCALE	MODEL SCALE
Area	_____	_____
Span (equivalent)	_____	_____
Inb'd equivalent chord	_____	_____
Outb'd equivalent chord	_____	_____
Ratio movable surface chord/ total surface chord	_____	_____
At Inb'd equiv. chord	_____	_____
At Outb'd equiv. chord	_____	_____
Sweep Back Angles, degrees	_____	_____
Leading Edge	_____	_____
Trailing Edge	_____	_____
Hingeline	_____	_____
Area Moment (Normal to hinge line)	_____	_____

TABLE IIIa. - Continued.

## MODEL DIMENSIONAL DATA

MODEL COMPONENT : F<sup>20</sup><sub>8.1</sub>GENERAL DESCRIPTION : Flap inboard  
deflected 20°DRAWING NUMBER 5.0. 1319-4 thru - 10 & -38

DIMENSIONS	FULL SCALE	MODEL SCALE
Area		
Span (equivalent)		WBL 3.854 to WBL 13.351
Inb'd equivalent chord		
Outb'd equivalent chord		
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord		
At Outb'd equiv. chord		
Sweep Back Angles, degrees		
Leading Edge		
Trailing Edge		
Hingeline		
Area Moment (Normal to hinge line)		

## MODEL DIMENSIONAL DATA

MODEL COMPONENT : F<sup>20</sup><sub>8.2</sub>GENERAL DESCRIPTION : Flap, Outbd deflected 20°DRAWING NUMBER : 5.0 1319-20 thru -25 & -42

## DIMENSIONS

## FULL SCALE

## MODEL SCALE

Area

Span (equivalent)

Inb'd equivalent chord

Outb'd equivalent chord

Ratio movable surface chord/  
total surface chord

At Inb'd equiv. chord

At Outb'd equiv. chord

Sweep Back Angles, degrees

Leading Edge

Trailing Edge

Hingeline

Area Moment (Normal to hinge line)

WBL 15.450  
to WBL 24.660

TABLE IIIa. - Continued.

MODEL COMPONENT: Horizontal Tail - H15.1AGENERAL DESCRIPTION: Swept Horizontal Tail WithPlanform Radius Fillet at L.E. - Body Intersection.MODEL SCALE= 0.03DRAWING NUMBER: 65-66630, 69-49180, 1007-477

<u>DIMENSIONS:</u>	<u>Full Scale</u>	<u>Model Scale</u>
<u>EXPOSED DATA</u> (one side)		
Area- $\text{ft}^2$	<u>736</u>	<u>0.6625</u>
Span- in.	<u>436.5</u>	<u>13.095</u>
Aspect Ratio	<u>          </u>	<u>          </u>
Taper Ratio	<u>          </u>	<u>          </u>
Dihedral Angle-deg.	<u>7</u>	<u>7</u>
Incidence Angle-deg.	<u>          </u>	<u>          </u>
Sweep Back Angle-deg. L. E.	<u>43.08</u>	<u>43.08</u>
Chords-in.		
Root	<u>388</u>	<u>11.64</u>
Tip	<u>97</u>	<u>2.91</u>
MAC	<u>          </u>	<u>          </u>
Apex Location-in.	<u>          </u>	<u>          </u>
$X_0$	<u>          </u>	<u>          </u>
$Y_0$	<u>          </u>	<u>          </u>
$Z_0$	<u>          </u>	<u>          </u>
.25 MAC Location-in.		
$X_c$ Station	<u>2564</u>	<u>76.920</u>
$Y_0$	<u>          </u>	<u>          </u>
$Z_0$	<u>          </u>	<u>          </u>

TABLE IIIa. - Continued.

MODEL COMPONENT: Horizontal Tail H15.6

GENERAL DESCRIPTION: Horizontal tail with vertical fins

on each tip at body B.L. 12.82

MODEL SCALE: 0.03

DRAWING NUMBER: \_\_\_\_\_

DIMENSIONS:

Full Scale

Model Scale

Exposed Data (one side)

Area - ft<sup>2</sup>

200

0.18

Span - in.

Aspect Ratio

Taper Ratio

Dihedral Angle-deg.

Incidence Angle-deg.

Sweep Back Angle-deg.

Chords - in.

TABLE IIIa. - Continued..

## MODEL DIMENSIONAL DATA

MODEL COMPONENT 60  
J11.10.2GENERAL DESCRIPTION Middle L.E. Slat deflected 60°Model Scale: 0.03DRAWING NUMBER 5.0.1319-26, & -44

DIMENSIONS :	FULL SCALE	MODEL SCALE
Area		
From WBL 15.389 to MAC Strut		
Span (equivalent), in.	<u>434</u>	<u>13.022</u>
Inb'd equivalent chord		
Chord	<u>31.6</u>	<u>.948</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord		
At Outb'd equiv. chord		
Sweep Back Angles, degrees		
Leading Edge		
Trailing Edge		
Hingeline		
Area Moment (Normal to hinge line)		



TABLE IIIa.- Continued.

## MODEL DIMENSIONAL DATA

MODEL COMPONENT J<sup>50</sup><sub>13.8.1</sub>GENERAL DESCRIPTION Outboard L.E. Slat deflected 50°Model Scale: 0.03DRAWING NUMBER 5.0 1319-26 & -44

DIMENSIONS	FULL SCALE	MODEL SCALE
Area		
(From WBL 26.374)		
Span (equivalent), in	360.5	10.814
Inb'd equivalent chord		
Outb'd equivalent chord, in	24.1	.722
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord		
At Outb'd equiv. chord		
Sweep Back Angles, degrees		
Leading Edge		
Trailing Edge		
Hingeline		
Area Moment (Normal to hinge line)		

TABLE IIIa. - Continued.

MODEL COMPONENT: <sup>70</sup>L9.8.3

GENERAL DESCRIPTION: Inboard Leading edge Krueger flap, deflected 70°

Model Scale: 0.03

Drawing NUMBER: 5.0, 1319-26 -44

DIMENSIONS:

	<u>Full Scale</u>	<u>Model Scale</u>
Span from WBL 7.322 to Nacelle Strut, in	<u>304.8</u>	<u>9.144</u>
Inb'd equivalent chord, in	<u>315.3</u>	<u>9.46</u>

## MODEL DIMENSIONAL DATA

MODEL COMPONENT: M<sub>25</sub>GENERAL DESCRIPTION: Inboard 747, J<sub>T9D</sub> Nacelle  
strutModel Scale: 0.03

DRAWING NUMBER \_\_\_\_\_

DIMENSIONS:	FULL SCALE	MODEL SCALE
Wing B.L. of nacelle $\bar{c}$ , in.	<u>470.0</u>	<u>14.100</u>
Cont angle, deg. inboard	<u>2</u>	<u>2</u>

TABLE IIIa. - Continued.

MODEL COMPONENT: M<sub>26.8</sub>

GENERAL DESCRIPTION: Outboard 747, & J<sub>T</sub>9D Nacelle

Strut

Model Scale: 0.03

DRAWING NUMBER 937-590

TABLE IIIa. - Continued.

MODEL DIMENSIONAL DATA

MODEL COMPONENT: N<sub>57</sub>

GENERAL DESCRIPTION Inboard Fan Cowl and Primary

747 Nacelle, flow thru type

Model Scale: 0.03

DRAWING NUMBER 5.0 1007-96, 97

TABLE IIIa. - Continued.

MODEL DIMENSIONAL DATA

MODEL COMPONENT: N<sub>58</sub>

GENERAL DESCRIPTION: Outboard fan cowl and primary

747 Nacelle, flow thru type

Model Scale: 0.03

DRAWING NUMBER 5.0. 1.007-96, -97

TABLE IIIa. - Continued.

MODEL COMPONENT: SPOILERS - S<sub>1-12</sub>

GENERAL DESCRIPTION: Multi-panel flight spoilers. Four outboard and two inboard spoilers per side. Subscript denotes spoiler panel S<sub>1</sub> is the most outboard L.H. panel and S<sub>12</sub> is most outboard R.H. panel.

747      MODEL SCALE: 0.030      MODEL: 1065

DRAWING NO.: 65-71450, S. O. 1065-51, -59, -81, -173

DIMENSIONS:      (one panel)	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Outboard S <sub>1-4</sub> and S <sub>9-12</sub> (Ft <sup>2</sup> )	<u>21.48</u>	<u>0.0193</u>
Span (equivalent), in.	<u>6.25</u>	<u>0.1875</u>
Chord, in.	<u>3.44</u>	<u>0.1032</u>
Inboard S <sub>5-6</sub> and S <sub>7-8</sub> (Ft <sup>2</sup> )	<u>35.31</u>	<u>0.0318</u>
Span (equivalent), in.	<u>7.50</u>	<u>0.225</u>
Chord, in.	<u>4.71</u>	<u>0.1413</u>

MODEL COMPONENT: T<sub>19</sub>GENERAL DESCRIPTION: Flap track fairings,4 on each side.Model Scale: 0.03DRAWING NUMBER 5.0. 1007-403

DIMENSIONS:	<u>Full Scale</u>	<u>Model Scale</u>
WBL of Track no. 1, in.	<u>235.3</u>	<u>7.06</u>
WBL of Track no. 2, in.	<u>353.</u>	<u>10.59</u>
WBL of Track no. 3, in.	<u>652.</u>	<u>19.56</u>
WBL of Track no. 4, in.	<u>743.6</u>	<u>22.31</u>
Distance from wing trailing edge to track trailing edge, in.	<u>50.</u>	<u>1.5</u>



TABLE IIIa. - Continued.

MODEL COMPONENT: V<sub>9.1</sub>GENERAL DESCRIPTION: Swept Vertical TailModel Scale: 0.03DRAWING NUMBER: 65-6.9716; 1007-26, -610; 937-319

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
TOTAL DATA		
Area (Theo)- Ft <sup>2</sup>	<u>830</u>	<u>.7470</u>
Planform	<u>          </u>	<u>          </u>
Span (Theo) - In.	<u>386.5</u>	<u>11.595</u>
Aspect Ratio	<u>          </u>	<u>          </u>
Rate of Taper	<u>          </u>	<u>          </u>
Taper Ratio	<u>          </u>	<u>          </u>
Sweep-Back Angles, Degrees	<u>          </u>	<u>          </u>
Leading Edge	<u>50.12</u>	<u>50.12</u>
Trailing Edge	<u>          </u>	<u>          </u>
0.25 Element Line	<u>          </u>	<u>          </u>
Chords:	<u>          </u>	<u>          </u>
Root (Theo) WP-in.	<u>461.67</u>	<u>13.85</u>
Tip (Theo) WP-in.	<u>157</u>	<u>4.71</u>
MAC	<u>          </u>	<u>          </u>
Fus. Sta. of .25 MAC	<u>2529.6</u>	<u>75.888</u>
W. P. of .25 MAC	<u>          </u>	<u>          </u>
B.L. of .25 MAC	<u>          </u>	<u>          </u>
Airfoil Section		
Leading Wedge Angle-Deg.	<u>          </u>	<u>          </u>
Trailing Wedge Angle-Deg.	<u>          </u>	<u>          </u>
Leading Edge Radius	<u>          </u>	<u>          </u>
Void Area	<u>          </u>	<u>          </u>
Blanketed Area	<u>          </u>	<u>          </u>

TABLE IIIa. - Concluded.

MODEL COMPONENT: WING - W<sub>44.1</sub>GENERAL DESCRIPTION: Swept 747 WingMODEL SCALE: 0.03DWG. NO.: 65-89585

<u>DIMENSIONS:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
TOTAL		
Area (Theo.) Ft <sup>2</sup>	5500	4.95
Planform	2348	70.44
Span (Theo. In.)	6.96	6.96
Aspect Ratio		
Rate of Taper		
Taper Ratio	7	7
Dihedral Angle, degrees		
Incidence Angle, degrees		
Aerodynamic Twist, degrees		
Swept Back Angles, degrees		
Leading Edge		
Trailing Edge		
0.25 Element Line		
Chords:		
Root (Theo) B.P.O.O.		
Tip, (Theo) B.P.		
MAC	327.8	9.834
Fus. Sta. of .25 MAC	1339.91	40.197
W. P. of .25 MAC	190.75	5.7225
B. L. of .25 MAC		

# TABLE III. MODEL DIMENSIONAL DATA

## b. Orbiter Model

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>38</sub>

GENERAL DESCRIPTION: Orbiter forward attachment struts.

MODEL SCALE: 0.030

DRAWING NO.: Boeing 1319-43

DIMENSIONS:

HEIGHT OF ACTUATOR RED TIP ABOVE  
STRUT UPPER JUNCTION, IN.

<u>SYMBOL</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
AT <sub>38</sub>	15.5	0.465
AT <sub>38.1.</sub>	91.67	2.75
AT <sub>38.2</sub>	75.00	2.25
AT <sub>38.2A</sub>	75.0	2.25
AT <sub>38.3</sub>	ROD REMOVED	ROD REMOVED

TABLE IIIb. (Continued)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>39</sub>

GENERAL DESCRIPTION: Orbiter aft attachment, pitch adjustable from  
0 to 10 deg.

MODEL SCALE: 0.030

DRAWING NO.: Boeing 50 1319-37.

DIMENSIONS:

	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Pivot location:		
In., $X_C$	400.0	12.0
In., $Z_C$	160.7	4.821
Equivalent Span: (At 0 deg iorb)		
Centerline orbiter, in.	521.0	15.63

TABLE IIIb. (Continued)

MODEL COMPONENT : BODY - B26GENERAL DESCRIPTION : Configuration 140A/B orbiter fuselage.NOTE: B26 is identical to B24 except underside of fuselage has been  
refaired to accept W116.MODEL SCALE: 0.030DRAWING NUMBER : VL70-000143B -000200. -000205. -006089. -000145.  
-000140A. -000140B

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OML: Fwd Sta. $X_0=235$ ) In.	1293.3	38.799
Length (IML: Fwd Sta. $X_0=238$ ) In.	1290.3	38.709
Max Width (@ $X_0 = 1528.3$ ) In.	264.00	7.920
Max Depth (@ $X_0 = 1464$ ) In.	250.00	7.500
Fineness Ratio	0.264	0.264
Area - Ft <sup>2</sup>		
Max. Cross-Sectional	340.88	0.3068
Planform		
Wetted		
Base		

TABLE IIIb. (Continued)

MODEL COMPONENT : OMS POD - M<sub>16</sub>GENERAL DESCRIPTION : Configuration 140C orbiter OMS pod - short  
pod.MODEL SCALE: 0.030DRAWING NUMBER : VL70-008401, -008410

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta. $X_0=1310.5$ ). In.	<u>258.50</u>	<u>7.755</u>
Max Width (@ $X_0 = 1511$ ). In.	<u>136.8</u>	<u>4.104</u>
Max Depth (@ $X = 1511$ ). In.	<u>74.70</u>	<u>2.241</u>
Fineness Ratio	<u>2.484</u>	<u>2.484</u>
Area - Ft <sup>2</sup>	<u></u>	<u></u>
Max. Cross-Sectional	<u>58.864</u>	<u>0.053</u>
Planform	<u></u>	<u></u>
Wetted	<u></u>	<u></u>
Base	<u></u>	<u></u>

TABLE IIIb. (Continued)

MODEL COMPONENT: MPS NOZZLES - N<sub>24</sub>GENERAL DESCRIPTION: Configuration 140A/B Orbiter MPS NozzlesMODEL SCALE: 0.030MODEL DWG: SS-A00147, Release 12DRAWING NUMBER: VL70-005030A, -000140A

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length - In.		
Gimbal Point to Exit Plane	<u>157.0</u>	<u>4.71</u>
Throat to Exit Plane	<u>99.2</u>	<u>2.976</u>
Diameter - In.		
Exit	<u>91.000</u>	<u>2.73</u>
Throat	<u>          </u>	<u>          </u>
Inlet	<u>          </u>	<u>          </u>
Area - ft <sup>2</sup>		
Exit	<u>45.166</u>	<u>0.0407</u>
Throat	<u>          </u>	<u>          </u>
Gimbal Point (Station) - In.		
Upper Nozzle		
X	<u>1445.00</u>	<u>43.35</u>
Y	<u>0.0</u>	<u>0.0</u>
Z	<u>443.00</u>	<u>13.29</u>
Lower Nozzles		
X	<u>1468.170</u>	<u>44.045</u>
Y	<u>± 53.000 ±</u>	<u>± 1.59 ±</u>
Z	<u>342.640</u>	<u>10.279</u>
Null Position - Deg.		
Upper Nozzle		
Pitch	<u>16</u>	<u>16</u>
Yaw	<u>0</u>	<u>0</u>
Lower Nozzle		
Pitch	<u>10</u>	<u>10</u>
Yaw	<u>3.5</u>	<u>3.5</u>

TABLE IIIb. (Continued)

MODEL COMPONENT: OMS NOZZLES - N28GENERAL DESCRIPTION: Configuration 1/4OA/B Orbiter OMS NozzlesMODEL SCALE: 0.030DRAWING NUMBER: VL70-0001/4OA (Location). SS-A00106. Release 5. (Contour)

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length - In.		
Gimbal Point to Exit Plane		
Throat to Exit Plane		
Diameter - In.		
Exit		
Throat		
Inlet		
Area - ft <sup>2</sup>		
<del>Exit</del> Max. Cross-Sectional (1 nozzle)		
Throat		
Gimbal Point (Station) - In.		
Left <del>Upper</del> Nozzle		
X <sub>o</sub>	<u>1518.0</u>	<u>45.54</u>
Y <sub>o</sub>	<u>-88.0</u>	<u>- 2.64</u>
Z <sub>o</sub>	<u>492.0</u>	<u>14.76</u>
Right <del>Lower</del> Nozzles		
X <sub>o</sub>	<u>1518.0</u>	<u>45.54</u>
Y <sub>o</sub>	<u>88.0</u>	<u>2.64</u>
Z <sub>o</sub>	<u>492.0</u>	<u>14.76</u>
Null Position - Deg.		
Left <del>Upper</del> Nozzle		
Pitch	<u>15°49'</u>	<u>15°49'</u>
Yaw	<u>12°17'</u>	<u>12°17'</u>
Right <del>Lower</del> Nozzle		
Pitch	<u>15°49'</u>	<u>15°49'</u>
Yaw	<u>12°17'</u>	<u>12°17'</u>



TABLE IIIb. (Continued)

MODEL COMPONENT: RUDDER - R<sub>5</sub>GENERAL DESCRIPTION: Configuration 140C orbiter rudder (identical to  
Configuration 140A/B rudder)MODEL SCALE: 0.030DRAWING NUMBER: VL70-000146B. -000095

<u>DIMENSIONS:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Area - Ft <sup>2</sup>	<u>100.15</u>	<u>0.090</u>
Span (equivalent). In.	<u>201.00</u>	<u>6.030</u>
Inb'd equivalent chord. In.	<u>91.585</u>	<u>2.748</u>
Outb'd equivalent chord, In.	<u>50.833</u>	<u>1.525</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees		
Leading Edge	<u>34.83</u>	<u>34.83</u>
Tailing Edge	<u>26.25</u>	<u>26.25</u>
Hingeline	<u>34.83</u>	<u>34.83</u>
Area Moment (Product of larea & c) (Normal to hingeline). Ft. <sup>3</sup>	<u>610.92</u>	<u>0.165</u>
Mean Aerodynamic Chord, In.	<u>73.2</u>	<u>2.196</u>

TABLE IIIb. (Continued)

MODEL COMPONENT : TAIL CONE - TC<sub>5</sub>

GENERAL DESCRIPTION : Fairing mounted on orbiter fuselage base for ferry missions.

MODEL SCALE: 0.030

DRAWING NUMBER : Boeing Drawing 1319-71.

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length , in.	<u>445.83</u>	<u>13.375</u>
Max Width, in.	<u>303.33</u>	<u>9.10</u>
Max Height, in.	<u>265.00</u>	<u>7.95</u>
Fineness Ratio	<u></u>	<u></u>
Area - Ft <sup>2</sup>	<u></u>	<u></u>
Projected frontal area	<u>324.105</u>	<u>0.2917</u>
Max. Cross-Sectional	<u></u>	<u></u>
Planform	<u></u>	<u></u>
Wetted	<u></u>	<u></u>
Base	<u></u>	<u></u>

TABLE IIIb. (Continued)

MODEL COMPONENT: VERTICAL - V<sub>8</sub>GENERAL DESCRIPTION: Configuration 140C orbiter vertical tail (identical to configuration 140A/B vertical tail).MODEL SCALE: 0.030DRAWING NUMBER: VL70-000140C -000146B

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
TOTAL DATA		
Area (Theo) - Ft <sup>2</sup>		
Planform	<u>413.243</u>	<u>0.372</u>
Span (Theo) - In.	<u>315.72</u>	<u>9.472</u>
Aspect Ratio	<u>1.675</u>	<u>1.675</u>
Rate of Taper	<u>0.507</u>	<u>0.507</u>
Taper Ratio	<u>0.404</u>	<u>0.404</u>
Sweep-Back Angles, Degrees.		
Leading Edge	<u>45.00</u>	<u>45.00</u>
Trailing Edge	<u>26.25</u>	<u>26.25</u>
0.25 Element Line	<u>41.13</u>	<u>41.13</u>
Chords:		
Root (Theo) WP	<u>268.50</u>	<u>8.055</u>
Tip (Theo) WP	<u>108.47</u>	<u>3.254</u>
MAC	<u>199.81</u>	<u>5.994</u>
Fus. Sta. of .25 MAC	<u>1463.35</u>	<u>43.901</u>
W.P. of .25 MAC	<u>635.52</u>	<u>19.066</u>
B.L. of .25 MAC	<u>0.00</u>	<u>0.00</u>
Airfoil Section		
Leading Wedge Angle - Deg.	<u>10.00</u>	<u>10.00</u>
Trailing Wedge Angle - Deg.	<u>14.92</u>	<u>14.92</u>
Leading Edge Radius	<u>2.00</u>	<u>0.060</u>
Void Area - Ft <sup>2</sup>	<u>13.17</u>	<u>0.</u>
Blanketed Area - Ft <sup>2</sup>	<u>0.0</u>	<u>0.0</u>

TABLE IIIb. (Continued)

MODEL COMPONENT: WING-W 116GENERAL DESCRIPTION: Configuration 4NOTE: Identical to W111, except airfoil thickness. Dihedral angle is along  
trailing edge of wing.MODEL SCALE: 0.030

TEST NO.

DWG. NO. VL70-000140A, -000200

DIMENSIONS:

FULL-SCALE

MODEL SCALE

## TOTAL DATA

Area (Theo.) Ft<sup>2</sup>  
 Planform  
 Span (Theo) In.  
 Aspect Ratio  
 Rate of Taper  
 Taper Ratio  
 Dihedral Angle, degrees  
 Incidence Angle, degrees  
 Aerodynamic Twist, degrees  
 Sweep Back Angles, degrees  
 Leading Edge  
 Trailing Edge  
 0.25 Element Line  
 Chords:  
 Root (Theo) B.P.O.O.  
 Tip, (Theo) B.P.  
 MAC  
 Fus. Sta. of .25 MAC  
 W.P. of .25 MAC  
 B.L. of .25 MAC

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2690.00	2.421
936.68	28.10
2.265	2.265
1.177	1.177
0.200	0.200
3.500	3.500
0.500	0.500
3.000	3.000
45.000	45.000
- 10.056	- 10.056
35.209	35.209
689.24	20.677
137.85	4.136
474.81	14.244
1136.83	34.105
290.58	8.717
182.13	5.464

## EXPOSED DATA

Area (Theo) Ft<sup>2</sup>  
 Span, (Theo) In. BP108  
 Aspect Ratio  
 Taper Ratio  
 Chords  
 Root BP108  
 Tip 1.00  $\frac{b}{2}$   
 MAC  
 Fus. Sta. of .25 MAC  
 W.P. of .25 MAC  
 B.L. of .25 MAC

1751.50	1.576
720.68	21.620
2.059	2.059
0.245	0.245
562.09	16.863
137.85	4.136
392.83	11.785
1185.98	35.579
294.30	8.829
251.77	7.553

Airfoil Section (Rockwell Mod NASA)  
XXXX-64Root  $\frac{b}{2}$  =

0.113

0.113

Tip  $\frac{b}{2}$  =

0.120

0.120

Data for (1) of (2) Sides

Leading Edge Cuff  
Planform Area Ft<sup>2</sup>

113.18

0.102

Leading Edge Intersects Fus M. L. @ Sta

500.00

15.00

Leading Edge Intersects Wing @ Sta

1024.00

30.72

TABLE IIIb. (Continued)

MODEL COMPONENT: SLOTTED ELEVON (6 -INCH GAP) - E<sub>14</sub>GENERAL DESCRIPTION: Configuration 140A/B Orbiter elevon.NOTE: E<sub>14</sub> is a slotted version of E<sub>26</sub>. Data are for one side.MODEL SCALE: 0.030DRAWING NUMBER: VL70-000200, -006089, -006092DIMENSIONS:

	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Area - Ft <sup>2</sup>	<u>210.0</u>	<u>0.189</u>
Span (equivalent) . In.	<u>349.2</u>	<u>10.476</u>
Inb'd equivalent chord . In.	<u>118.004</u>	<u>3.540</u>
Outb'd equivalent chord . In.	<u>55.192</u>	<u>1.656</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.2096</u>	<u>0.2096</u>
At Outb'd equiv. chord	<u>0.4004</u>	<u>0.4004</u>
Sweep Back Angles, degrees		
Leading Edge	<u>0.00</u>	<u>0.00</u>
Tailing Edge	<u>- 10.056</u>	<u>- 10.056</u>
Hingeline	<u>0.00</u>	<u>0.00</u>
(Product of area and $\bar{c}$ )		
Area Moment (Normal to hingeline) . Ft <sup>3</sup>	<u>1587.25</u>	<u>0.043</u>
Mean Aerodynamic Chord, In.	<u>90.7</u>	<u>2.721</u>

TABLE IIIb. (Continued)

MODEL COMPONENT : CANOPY - C9GENERAL DESCRIPTION : Configuration 3A. Canopy used with fuselageB<sub>26</sub>.MODEL SCALE: 0.030MODEL DWG: SS-A00147, Release 12DRAWING NUMBER : VL70-000143A

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length ( $X_o = 434.643$ to $578$ ), In.	<u>143.357</u>	<u>4.301</u>
Max Width (@ $X_o = 513.127$ ), In.	<u>152.412</u>	<u>4.572</u>
Max Depth (@ $X_o = 485.0$ ), In.	<u>25.00</u>	<u>0.750</u>
Fineness Ratio	<u>                    </u>	<u>                    </u>
Area	<u>                    </u>	<u>                    </u>
Max. Cross-Sectional	<u>                    </u>	<u>                    </u>
Planform	<u>                    </u>	<u>                    </u>
Wetted	<u>                    </u>	<u>                    </u>
Base	<u>                    </u>	<u>                    </u>

TABLE IIIb. (Concluded)

MODEL COMPONENT : BODY FLAP - FgGENERAL DESCRIPTION : Configuration 140A/B orbiter body flapHingeline located at  $X_0 = 1528.3$ ,  $Z_0 = 284.3$ MODEL SCALE: 0.030MODEL DWG: SS-A00147. Release 12DRAWING NUMBER: VL70-000140A, -000145

## DIMENSIONS :

## FULL SCALE

## MODEL SCALE

Length ( $X_0=1520$  to  $X_0=1613$ ) In. 93.00 2.79Max Width (In.) 262.0 7.86Max Depth (@  $X_0 = 1520$ ) In. 23.00 0.69Fineness Ratio  Area - Ft<sup>2</sup>  Max. Cross-Sectional  Planform 150.525 0.135Wetted  Base 41.847 0.038

TABLE IV. - CA5 DATASET DESCRIPTION

DATASET TYPE	DESCRIPTION
RGMXXX	Main balance data which have been corrected for main balance mounting system tares and contain wall corrections.
AGMXXX	Orbiter (internal) balance "basic" data which contains "standard" wind tunnel corrections including a wall correction.
BGMXXX	Main balance data (corrected for main balance mounting system tares) minus orbiter (internal) balance "basic" data (RGMXXX-AGMXXX).
RGMCXX	Main balance mounting system tare data.



**Notes:**

1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrows
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

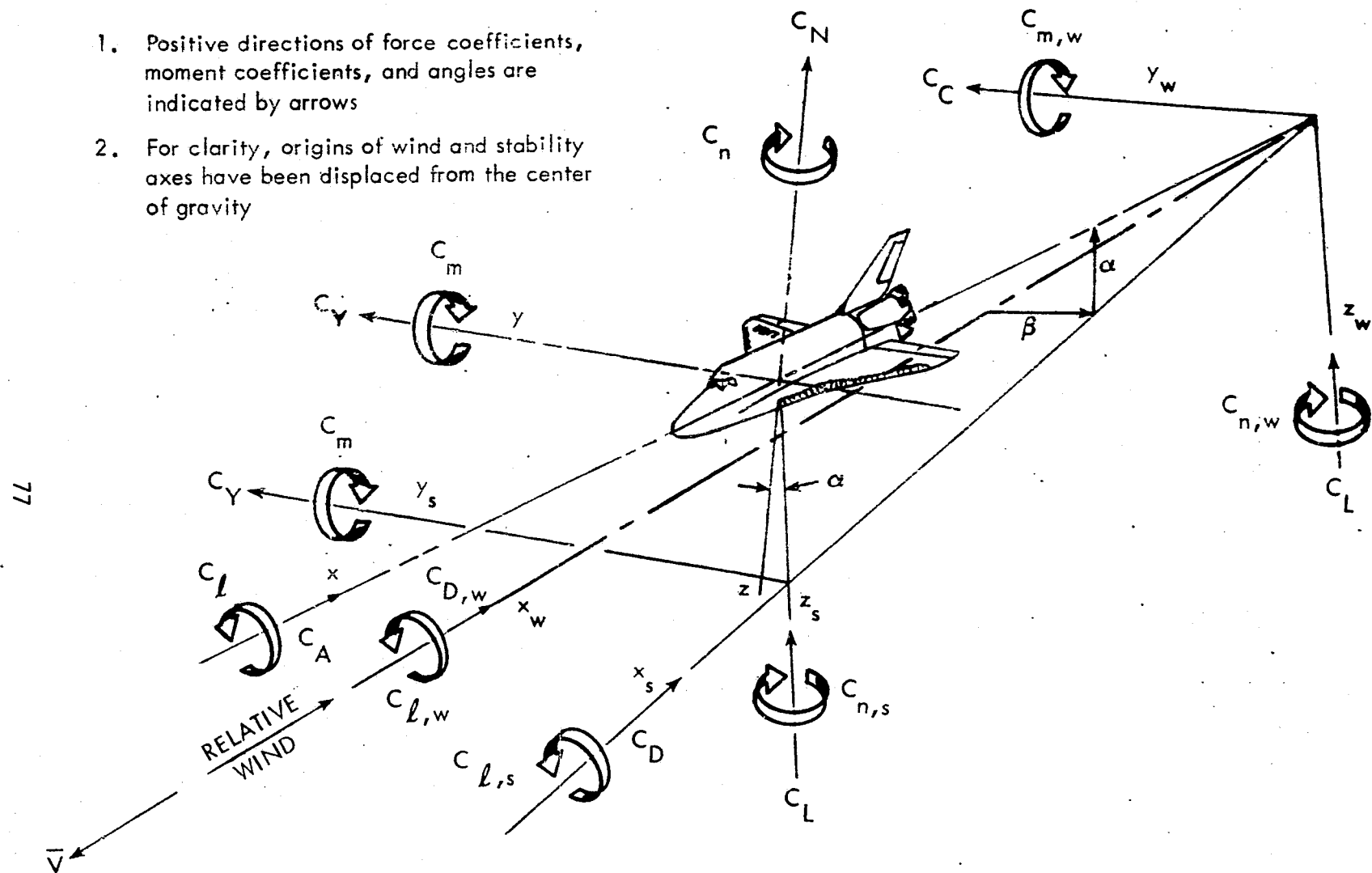
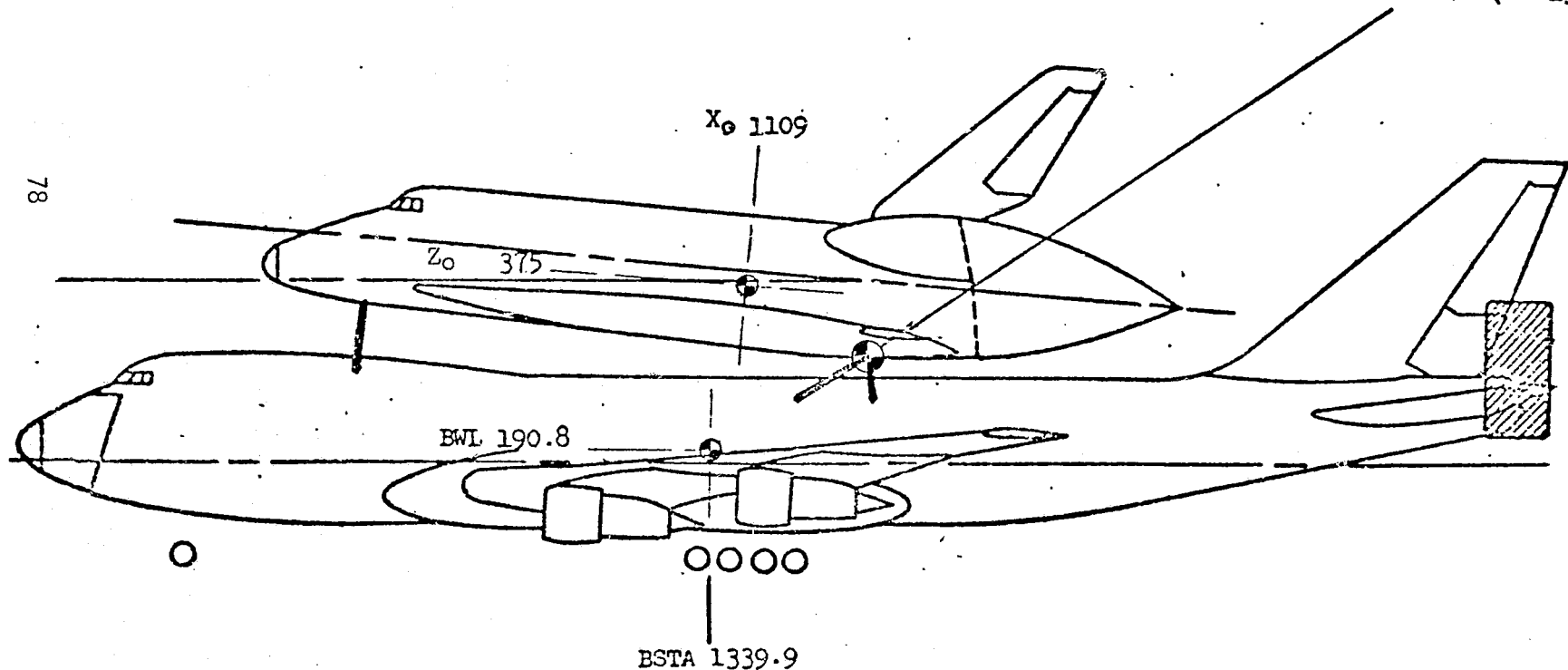


Figure A. - Axis systems.

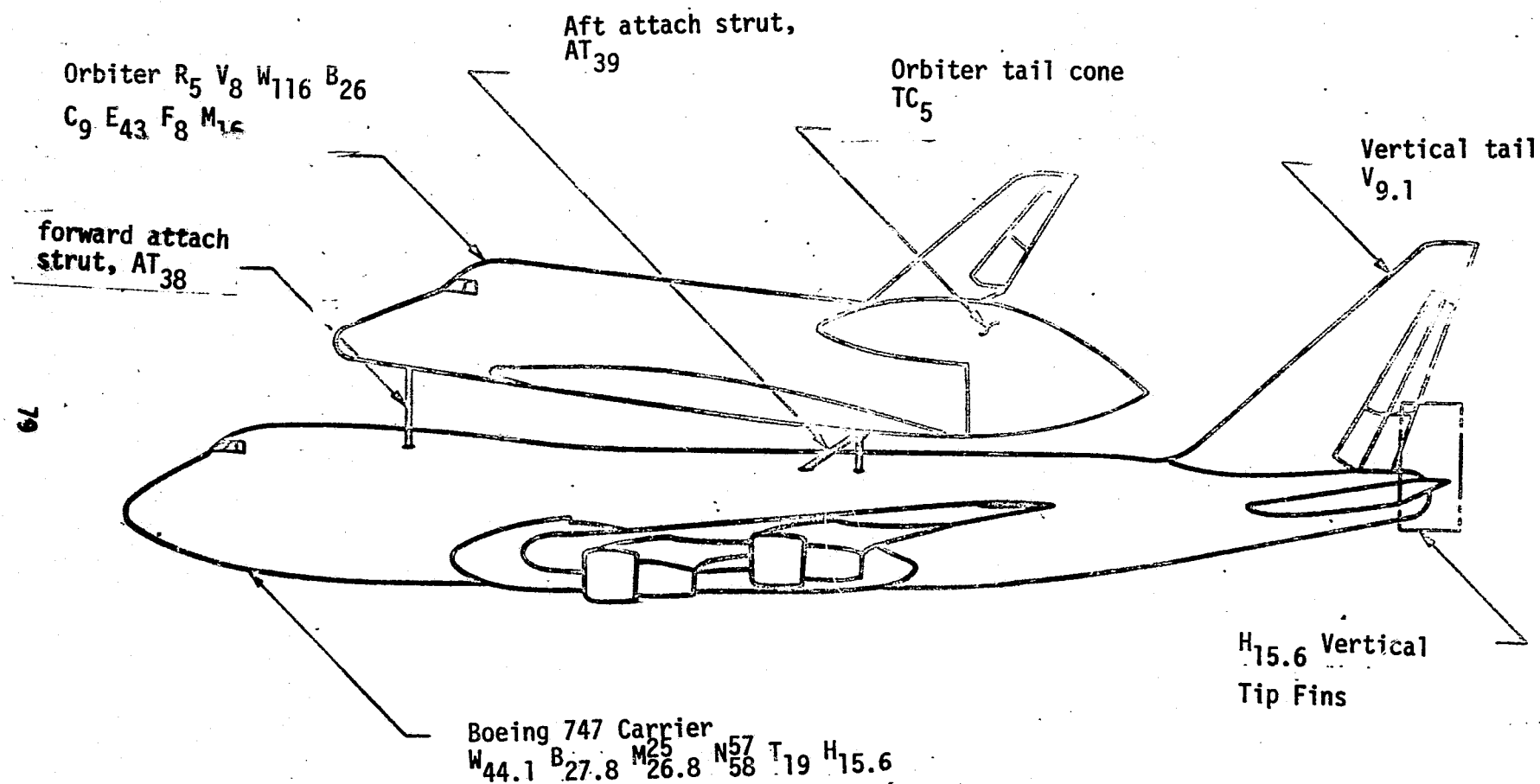
# REFERENCE DIMENSIONS (FS)

	ORBITER	747 CARRIER
WING AREA $\sim \text{Ft}^2$	2690	5500
MAC ( $\bar{c}$ ) $\sim$ INCHES	474.81	327.78
SPAN (b) $\sim$ INCHES	936.68	2348.04
MOMENT REFERENCE CENTER	67.5% LB	25.0 % $\bar{c}$
F.S. $\sim$ INCHES	1109.0	1339.9
W.P. $\sim$ INCHES	375.0	190.8

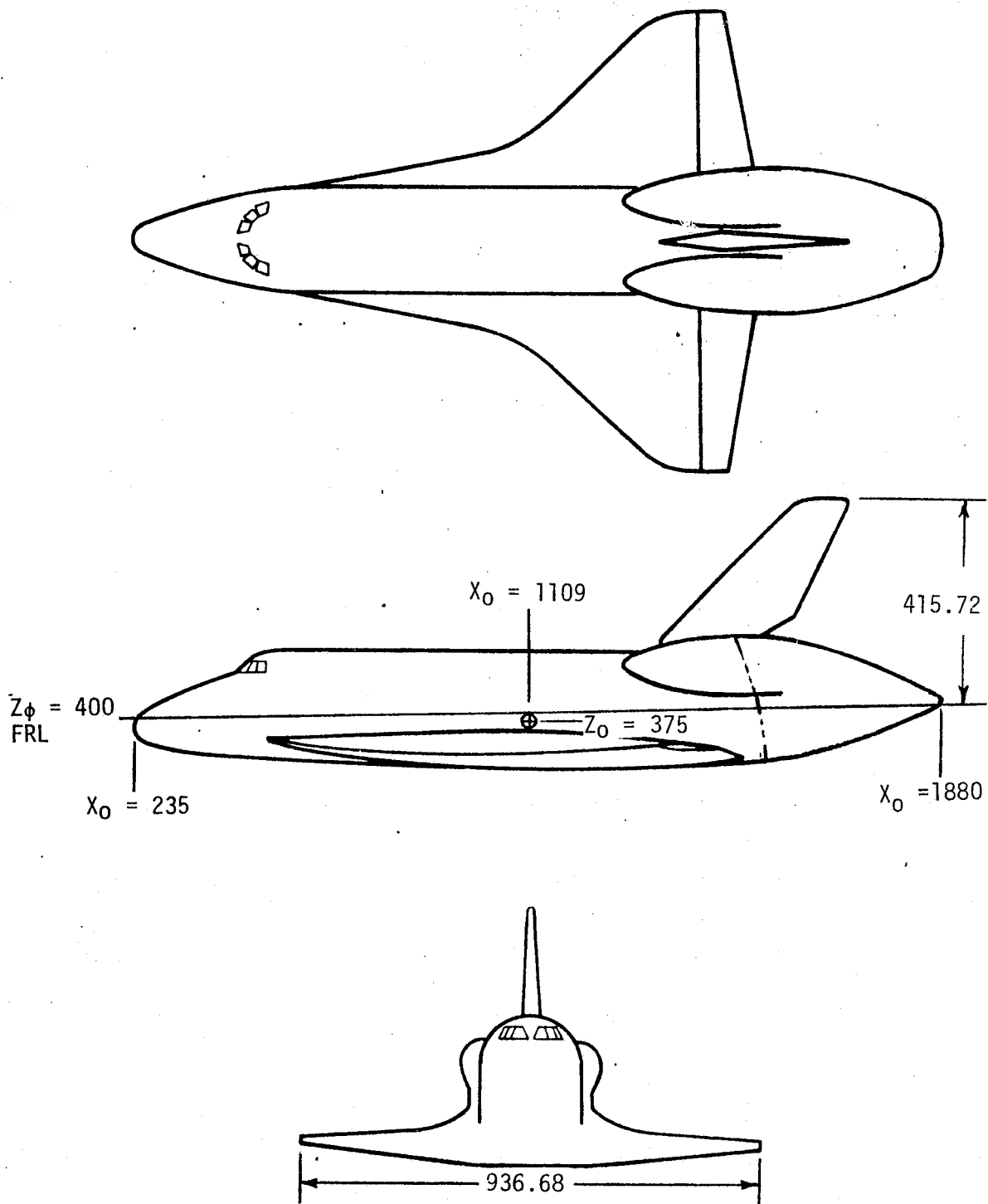
BWL 400 ( $X_o$  96 51)  
 BSTA 1607 ( $Z_o$  267.5)  
 ( $X_o$  1317)



a. Orbiter/747 Flight Test Configuration Reference Dimensions  
 Figure B. - Model sketches.



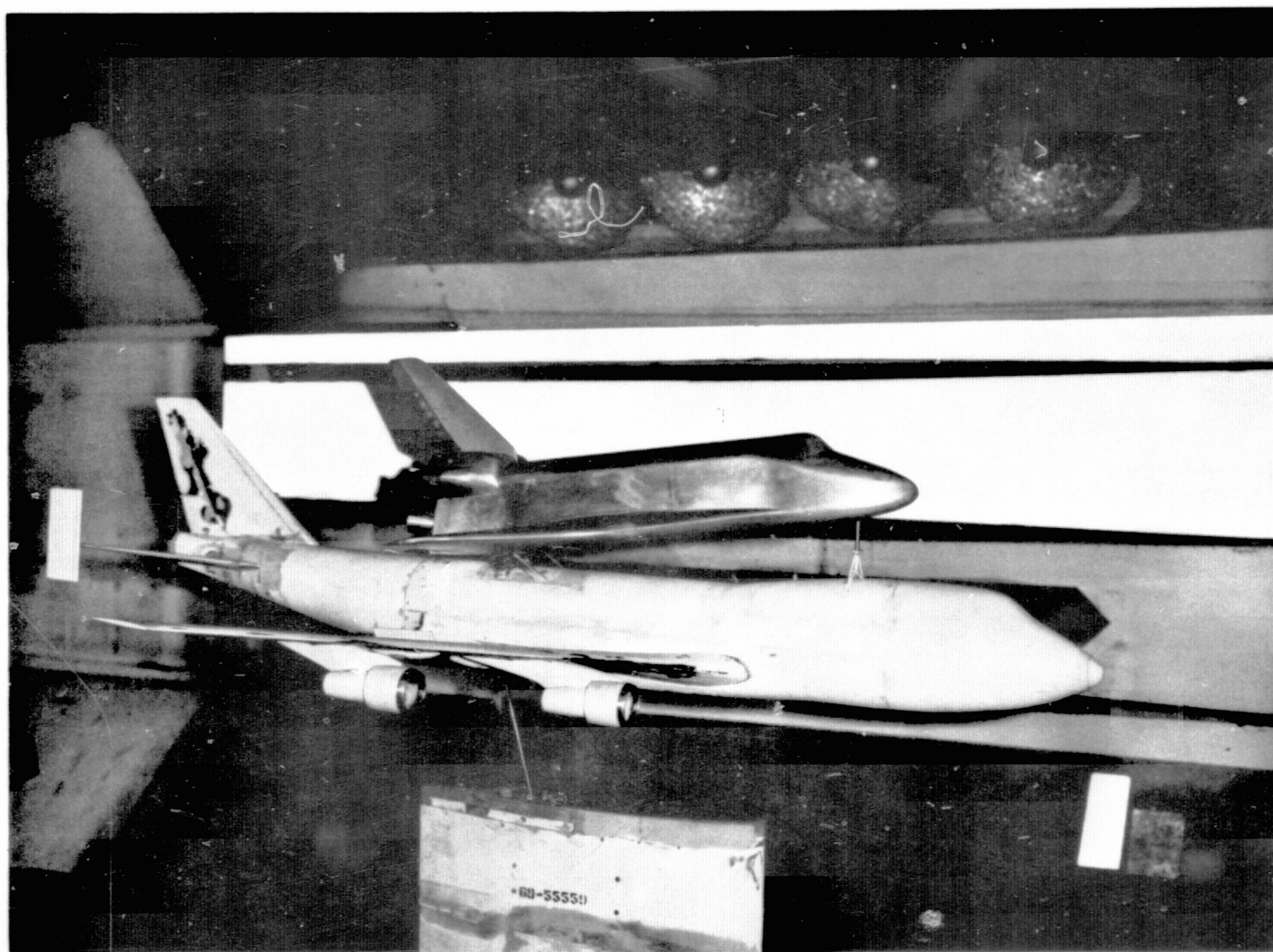
b. Orbiter/Carrier Model Nomenclature  
Figure B. - Continued.



c. Orbiter Configuration  
Figure B. - Continued.

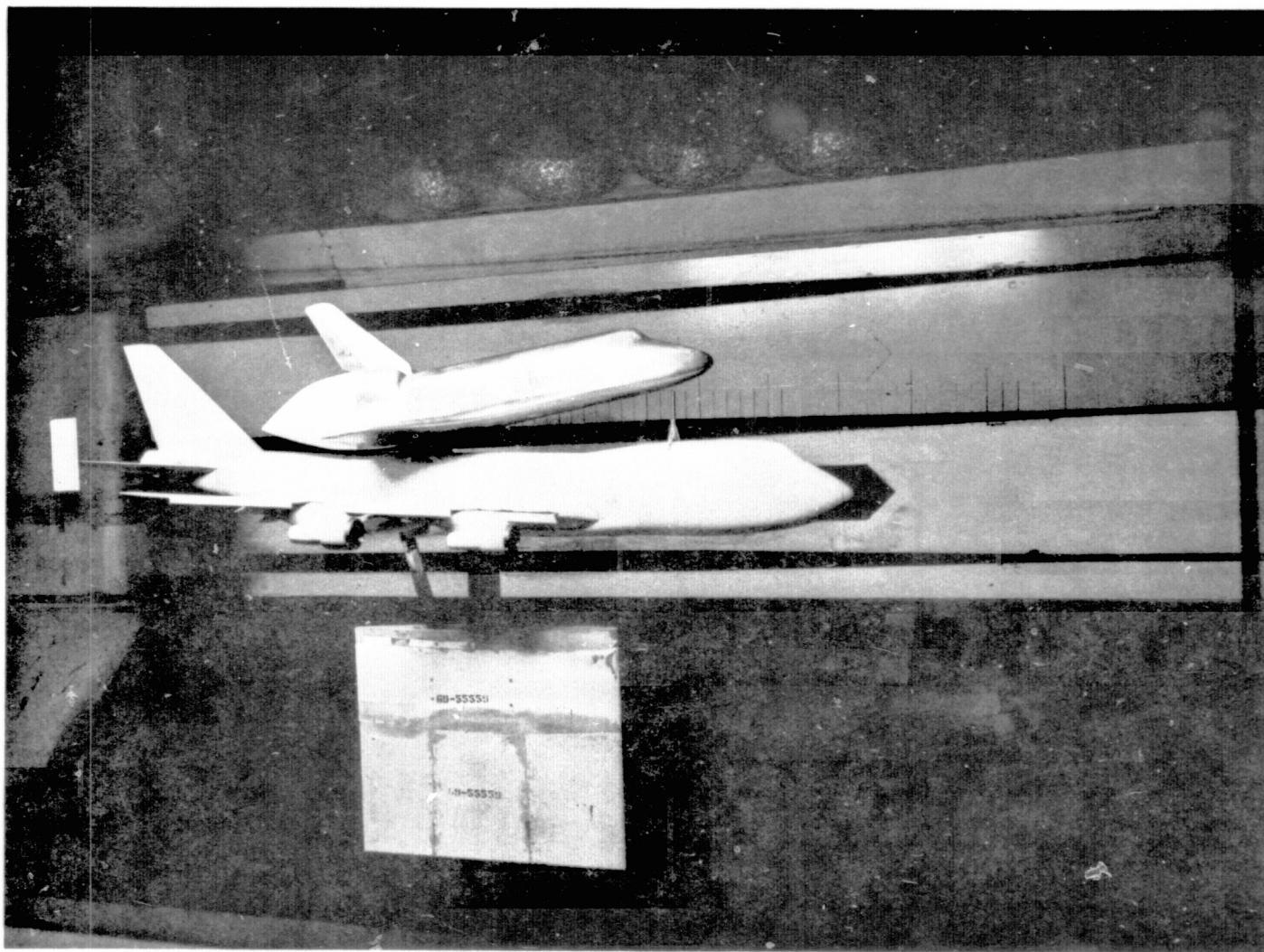
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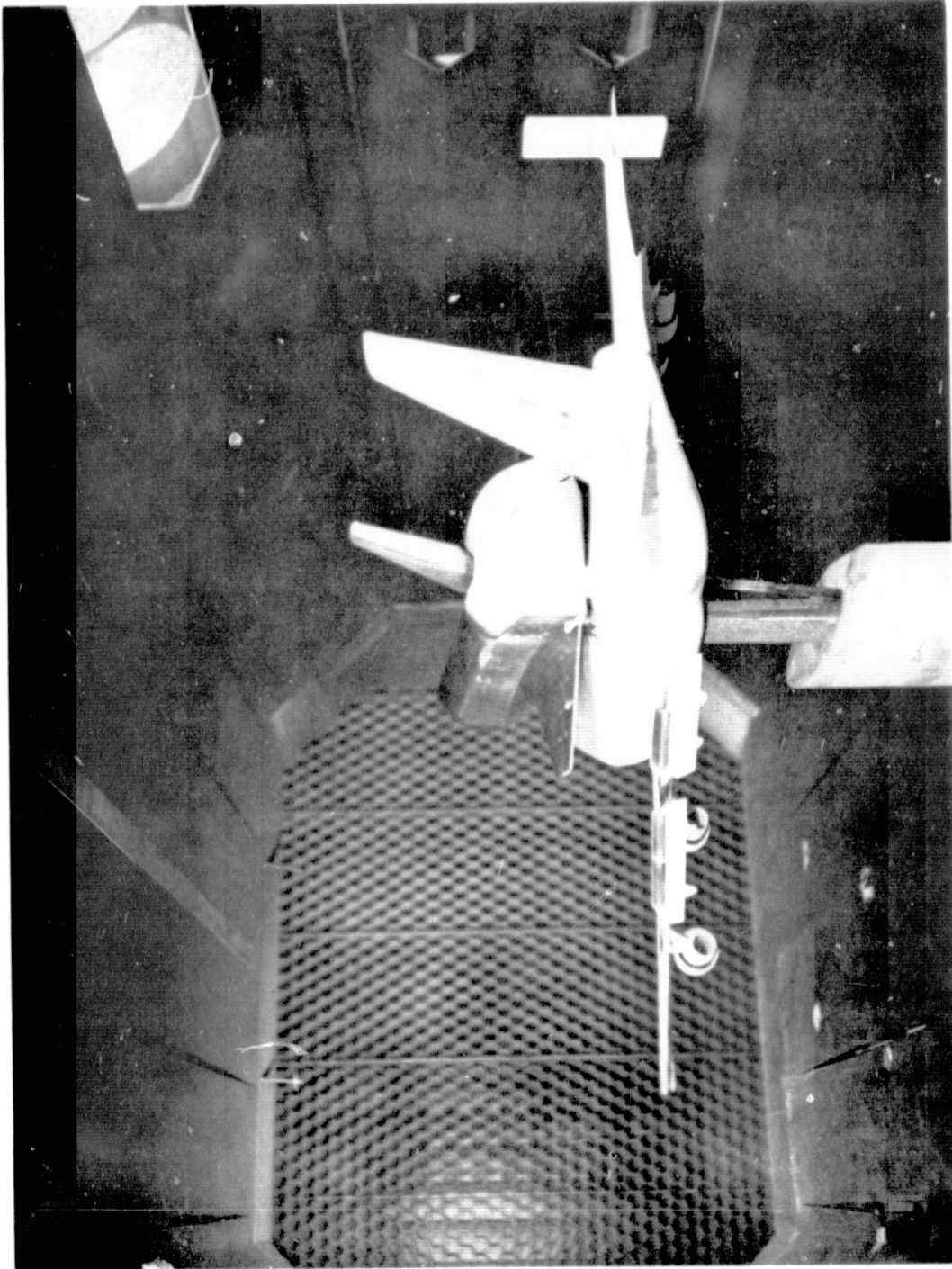
a. Orbiter/Carrier Mated Configuration Side View  $i_{ORB} = 8^\circ$ ,  
Orbiter without Tail Cone Fairing

Figure C. - Model photographs.



b. Orbiter/Carrier Mated Configuration Side View  $i_{ORB} = 10^\circ$ ,  
Orbiter with Tail Cone Fairing

Figure C. - Continued.



c. Orbiter/Carrier Rear View

Figure C. - Continued.

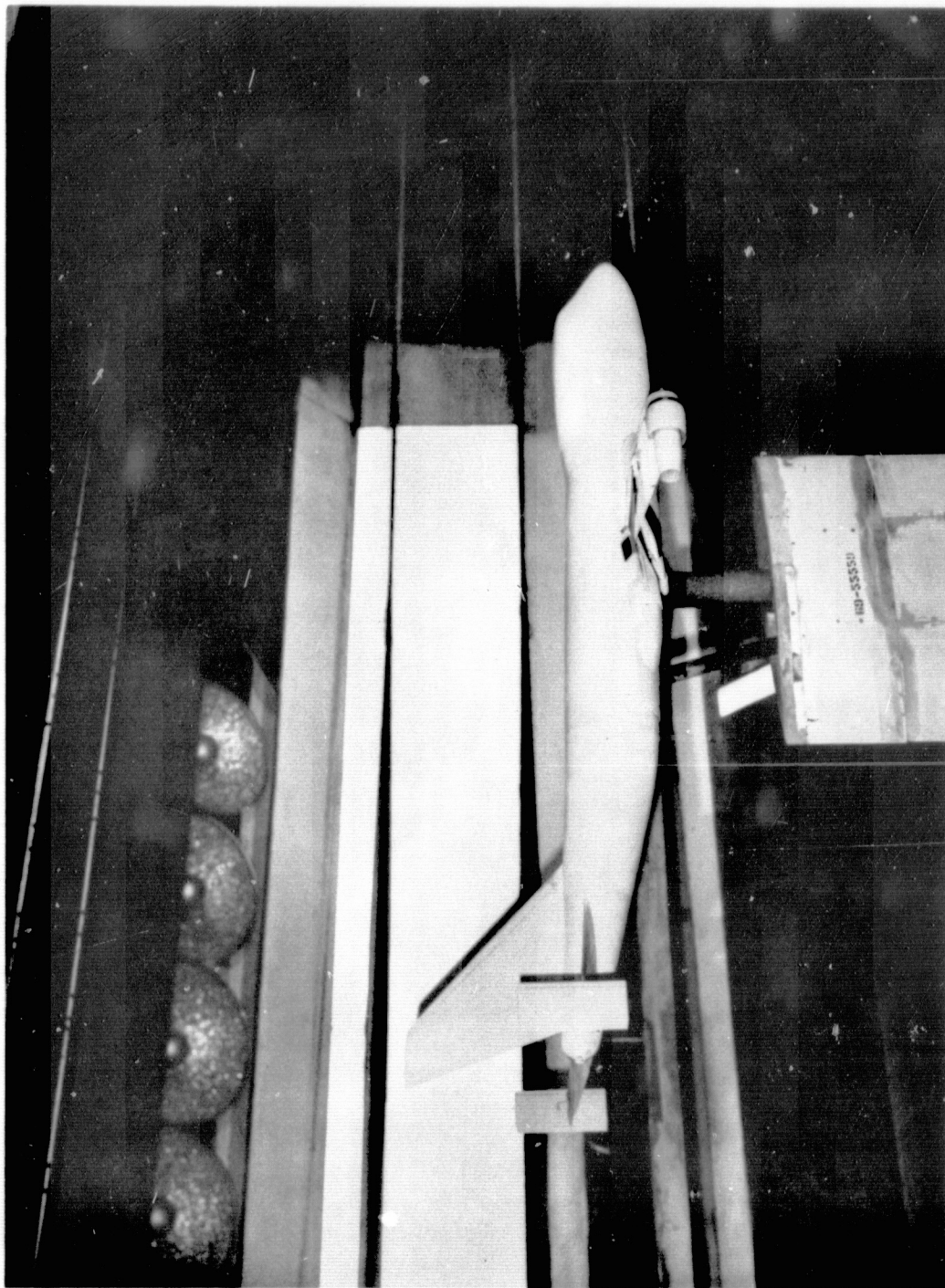
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d. Orbiter Alone Installation

Figure C. - Continued.

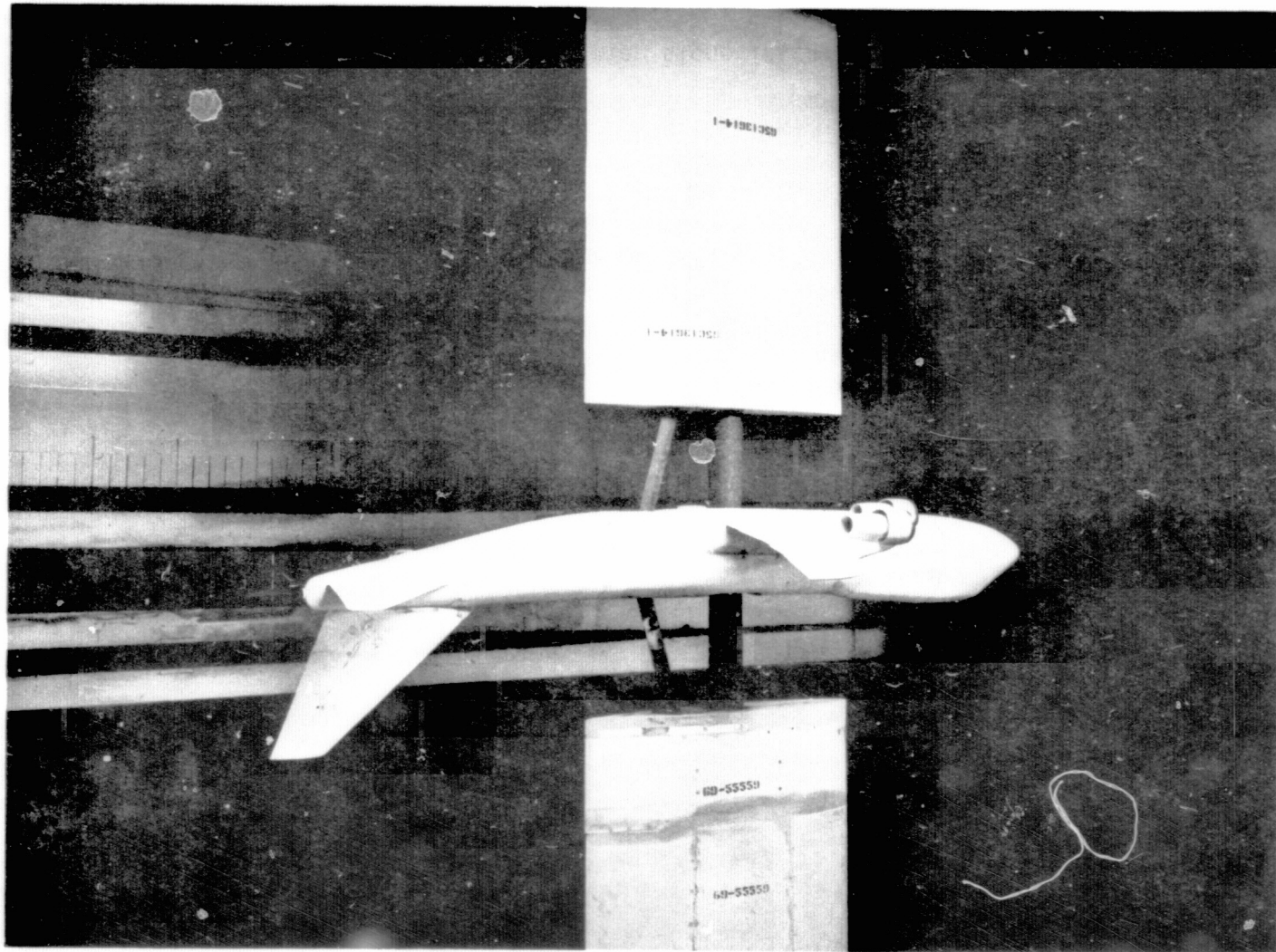




e. Carrier Alone Installation

Figure C. - Continued.

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f. Carrier Inverted with Image Strut for Determination  
of Wind Tunnel Strut Tare and Interference Effects

Figure C. - Concluded.

Volume 1 - Data Figures 1 to 200  
Volume 2 - Data Figures 201 to 260

## DATA FIGURES

SYMBOL

○  
□  
◇  
△

MACH

.300 ALPHA1  
.500 RUD-U  
.600 ELV-1B  
.700 S1-2  
S5-6

PARAMETRIC VALUES

8.000 STAB -2.000  
10.000 RUD-L 10.000  
.000 ELV-CB 3.000  
.000 S3-4 .000  
.000 IORB 4.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
LREF 327.8000 IN.  
BREF 2348.0000 IN.  
XMRP 1339.9100 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0300

SIDE FORCE COEFFICIENT, CY

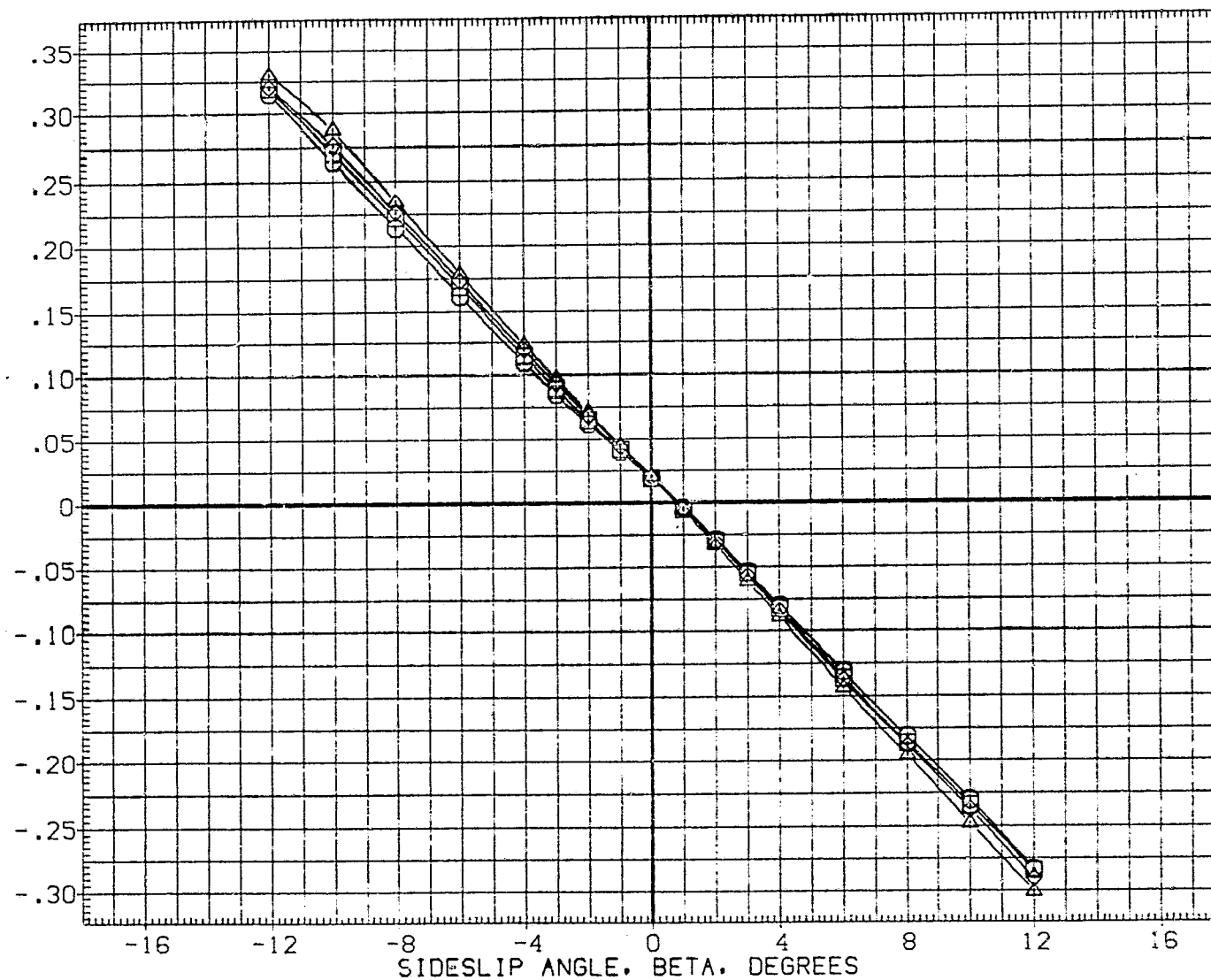


FIG.201 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA1=8,RUDDER=10/10

TOTAL

PAGE

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CA5 K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )(RGM123)

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA1 8.000 STAB -2.000
□	.500	RUD-U 10.000 RUD-L 10.000
◇	.600	ELV-1B .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 IORB 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2349.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

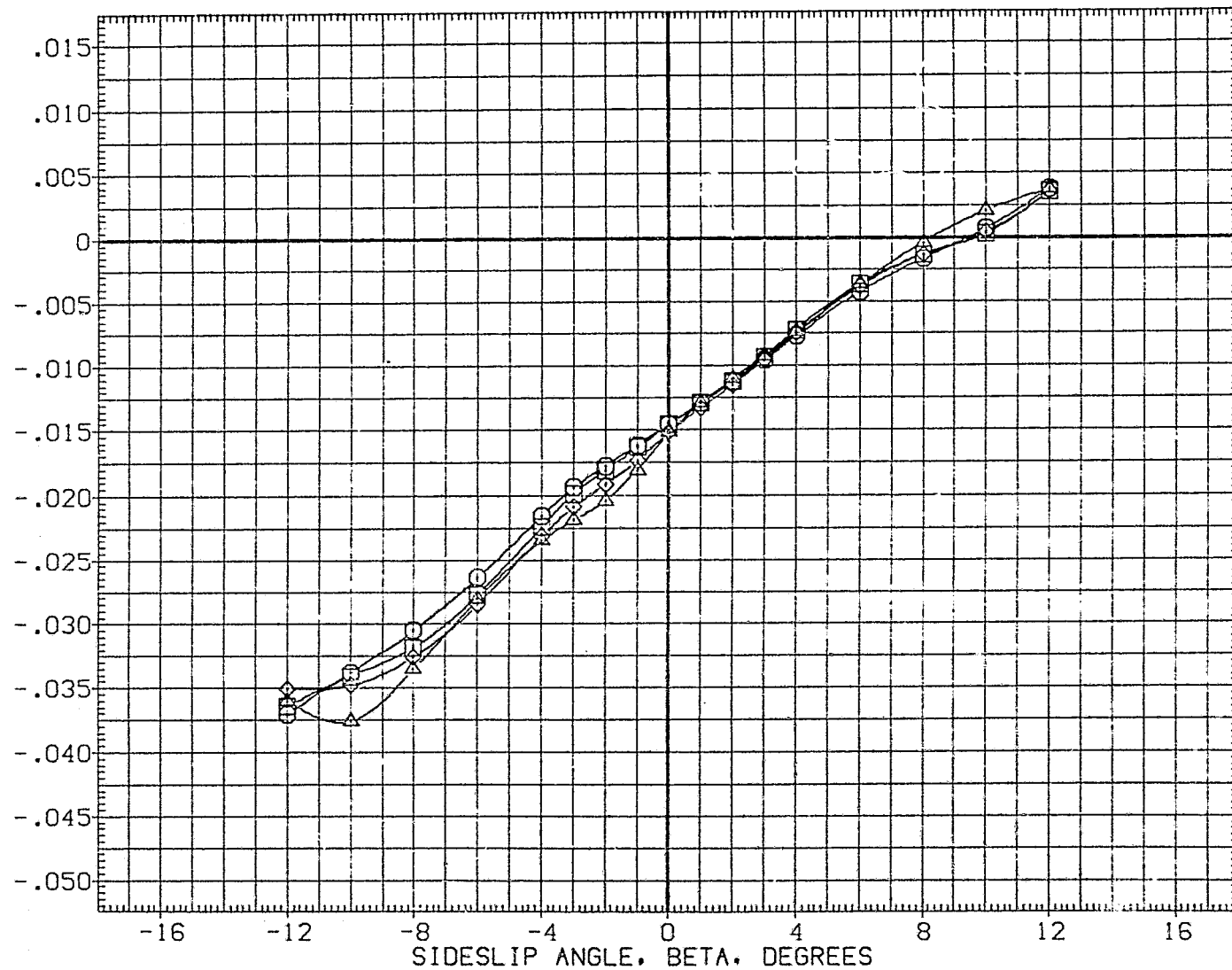


FIG.201 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA1=8,RUDDER=10/10

TOTAL

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA I 8.000 STAB -2.000
□	.500	RUD-U 10.000 RUD-L 10.000
◇	.600	ELV-IB .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 10RB 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XM RP	1339.9100	IN. XC
YM RP	.0000	IN. YC
ZM RP	190.7500	IN. ZC
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

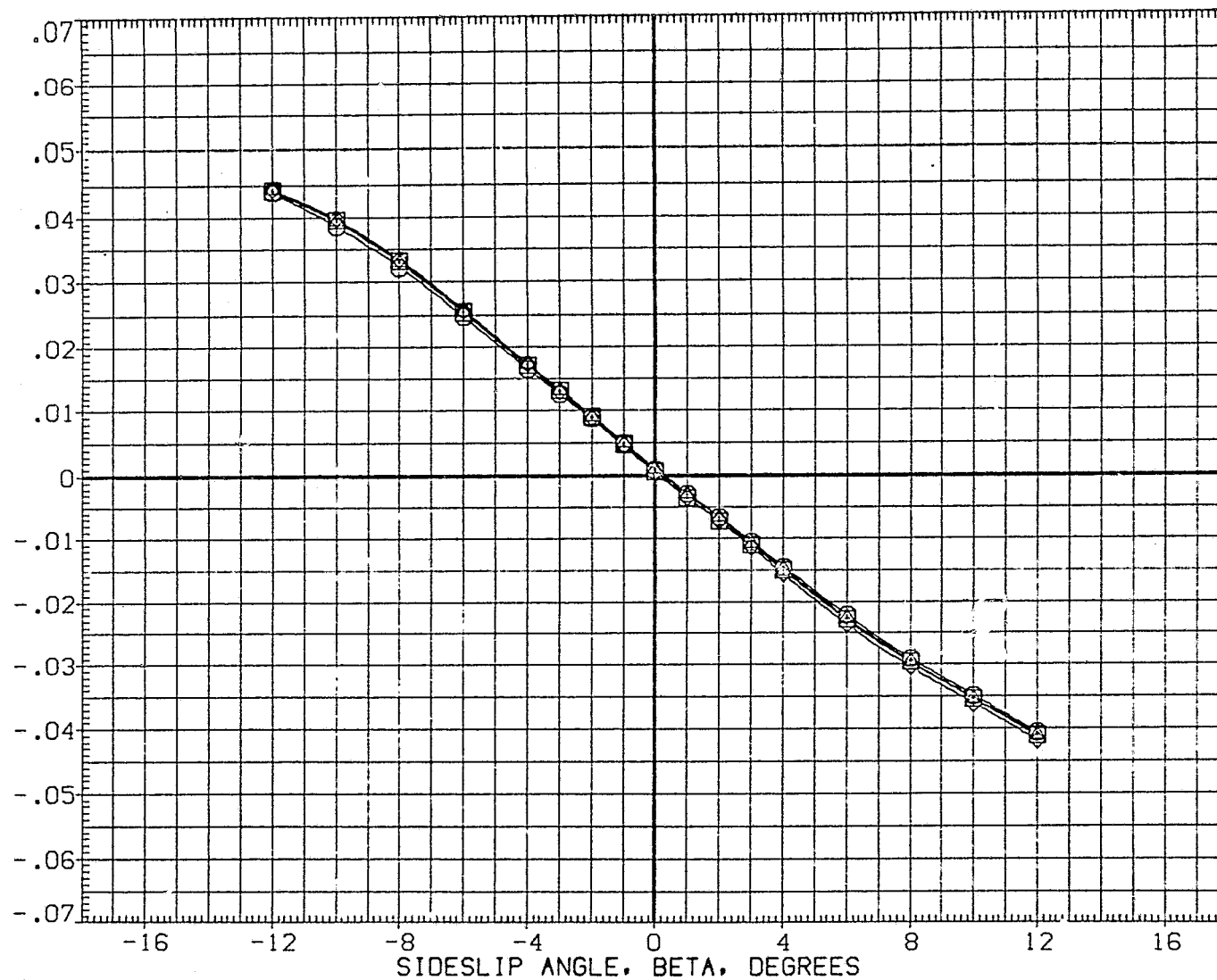


FIG.201 747+0RB(4 DEG)+TIP FINS, FLAPS UP, ALPHA I=8, RUDDER=10/10

TOTAL

PAGE

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CA5 K1 FO H15.6 V9.1 MINUS ORB TC5 AT38.3 (BGM123)

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA1 8.000 STAB -2.000
□	.500	RUD-U 10.000 RUD-L 10.000
◇	.600	ELV-1B .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 IORB 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

INCREMENTAL SIDE FORCE COEFFICIENT(STABILITY AXIS), DCY

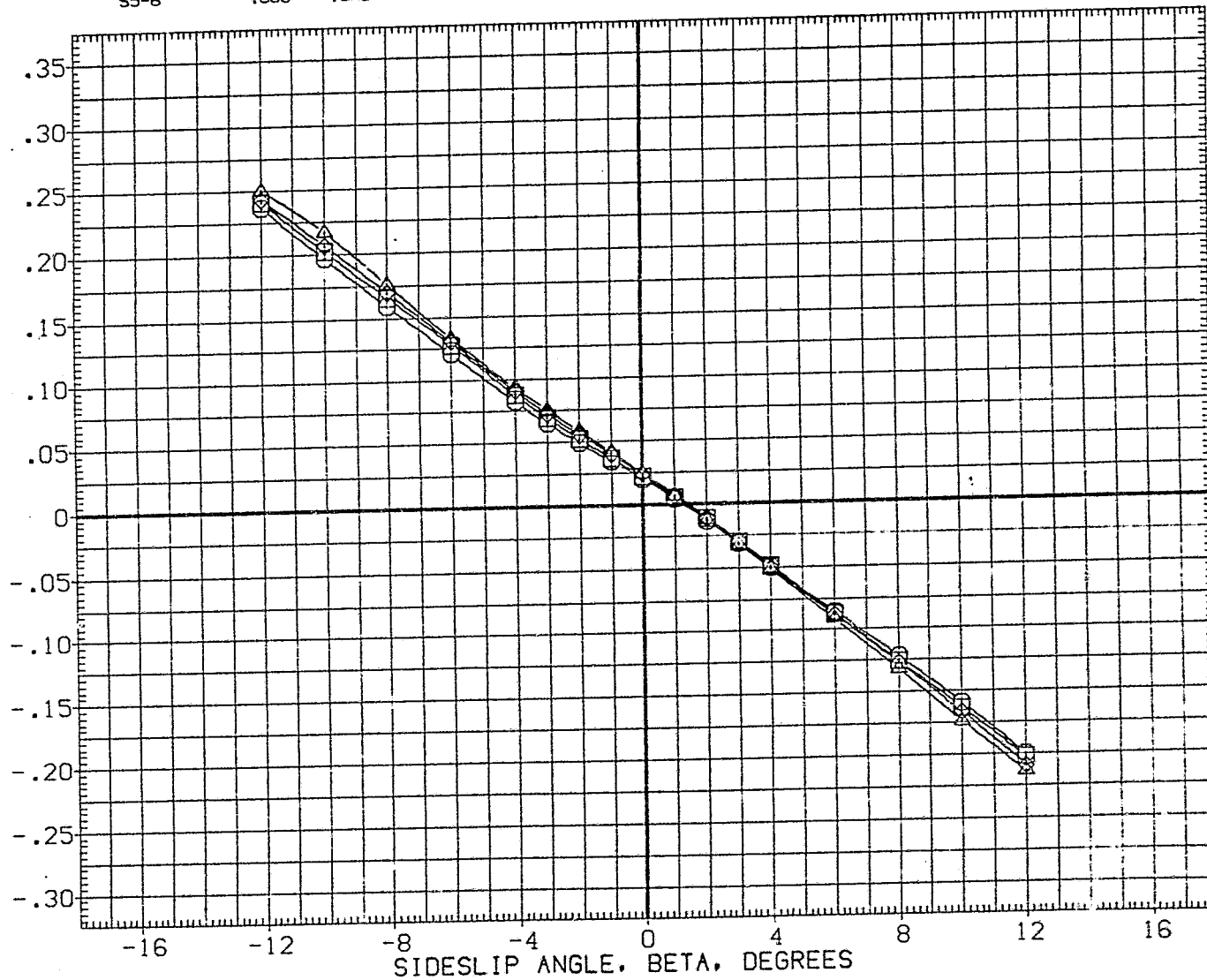


FIG.202 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA1=8,RUDDER=10/10

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA I 8.000 STAB -2.000
□	.500	RUD-U 10.000 RUD-L 10.000
◇	.600	ELV-1B .000 ELV-0B 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 10RB 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	N. XC
YMRP	.0000	N. YC
ZMRP	190.7500	N. ZC
SCALE	.0300	

INCREMENTAL YAWING MOMENT COEFFICIENT (STABILITY AXIS), DCLN

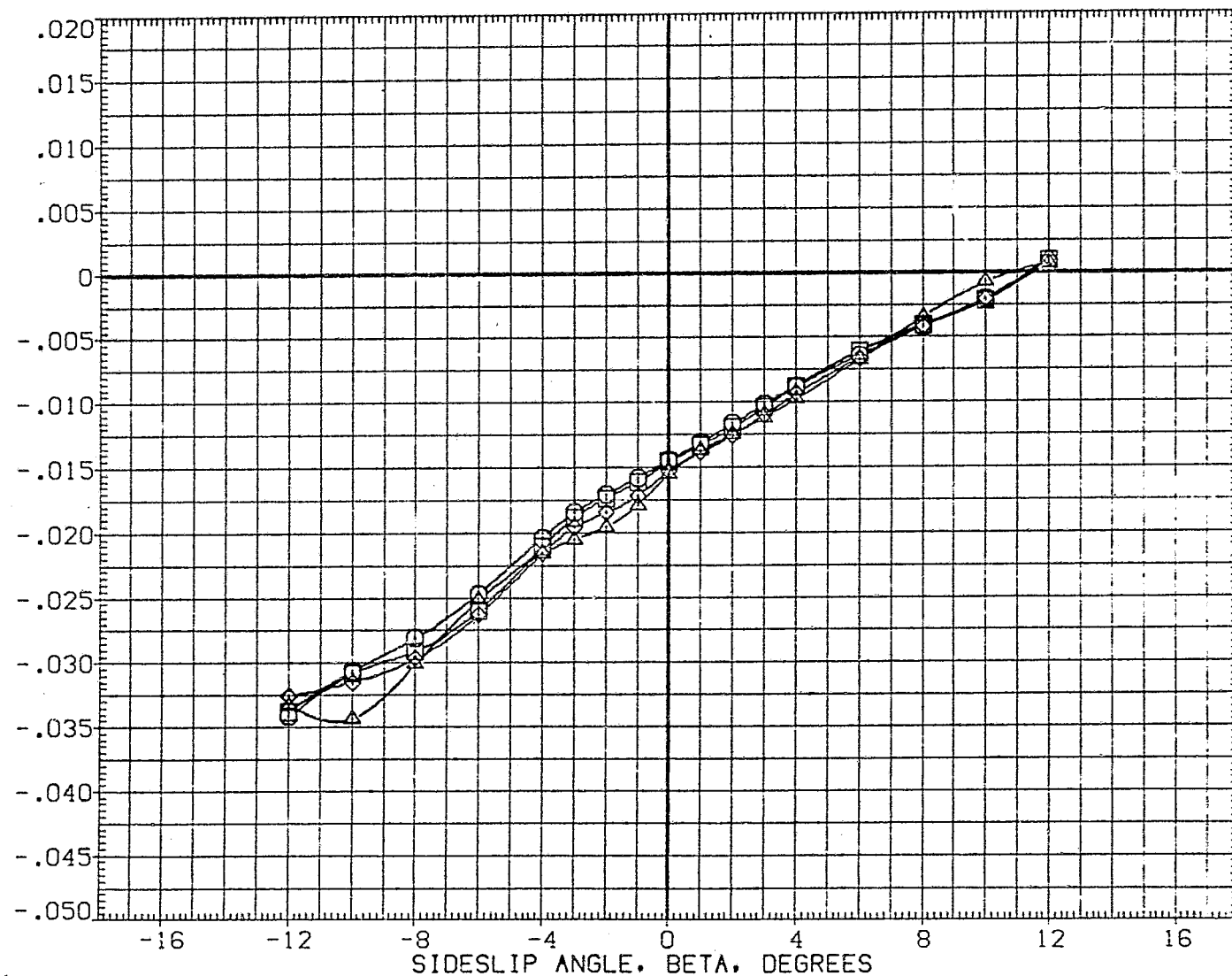


FIG.202 747+0RB(4 DEG)+TIP FINS, FLAPS UP, ALPHA I=8, RUDDER=10/10



CA5 K1 FO H15.6 V9.1 MINUS ORB TC5 AT38.3 (BGM123)

SYMBOL  
○  
□  
◇  
△

MACH	ALPHA1	PARAMETRIC VALUES	STAB	
.300		8.000	-2.000	
.500	RUD-U	10.000	RUD-L	10.000
.600	ELV-1B	.000	ELV-OB	3.000
.700	S1-2	.000	S3-4	.000
	S5-6	.000	IORR	4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

INCREMENTAL ROLLING MOMENT COEFFICIENT(STABILITY AXIS). DCSL

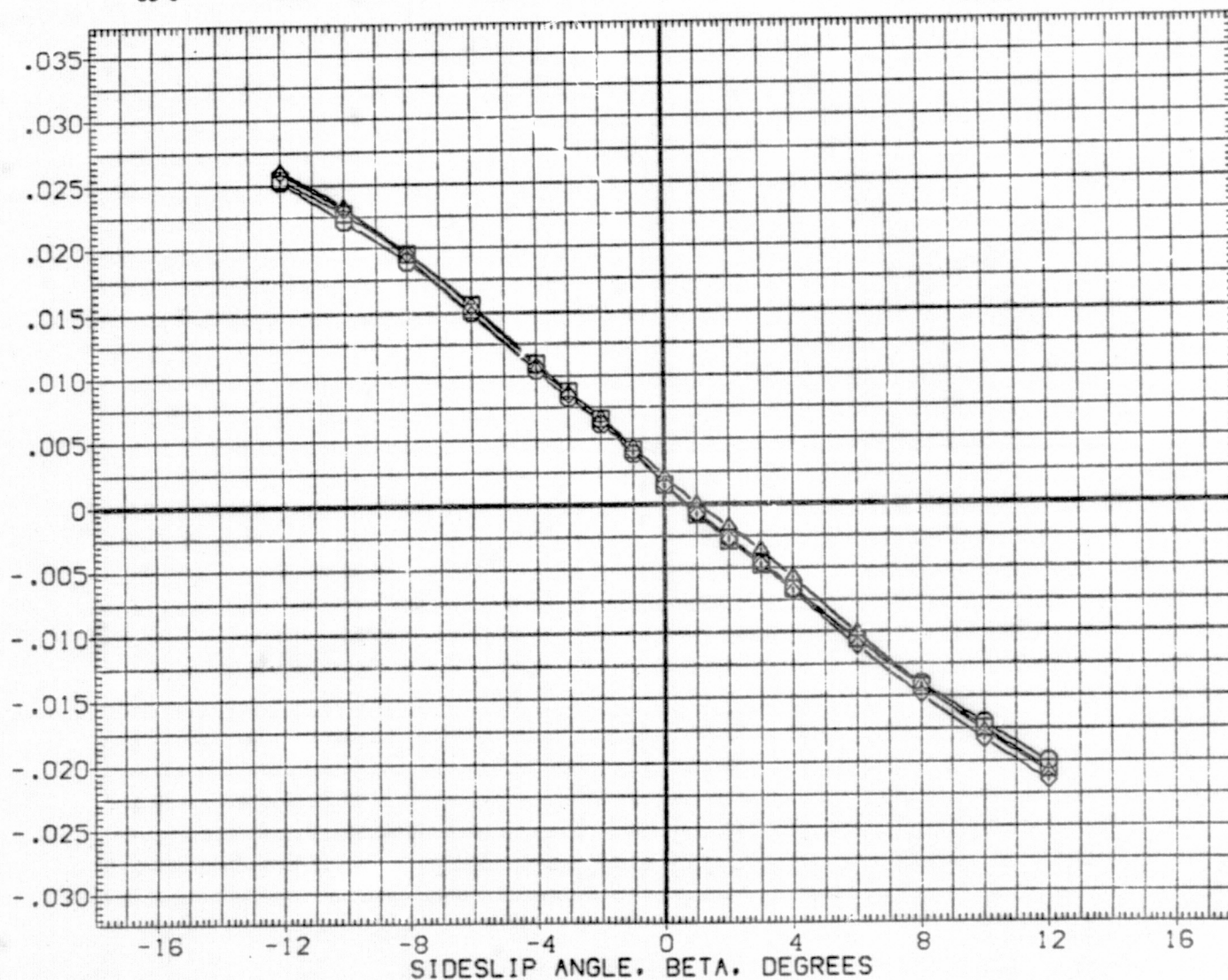


FIG.202 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA1=8,RUDDER=10/10

SYMBOL	MACH	PARAMETRIC VALUES				REFERENCE INFORMATION	
		ALPHA1	8.000	STAB	-2.000	SREF	2690.0000
○	.499	RUD-U	10.000	RUD-L	10.000	LREF	474.8100
□	.600	ELV-1B	.000	ELV-0B	3.000	BREF	936.6800
◇	.700	S1-2	.000	S3-4	.000	XMRP	1109.0000
△		S5-6	.000	10RB	4.000	YMRP	.0000
						ZMRP	375.0000
						SCALE	.0300
							SQ.FT.
							IN.
							IN.
							IN. XZ
							IN. YZ
							IN. ZC

SIDE FORCE COEFFICIENT, CY

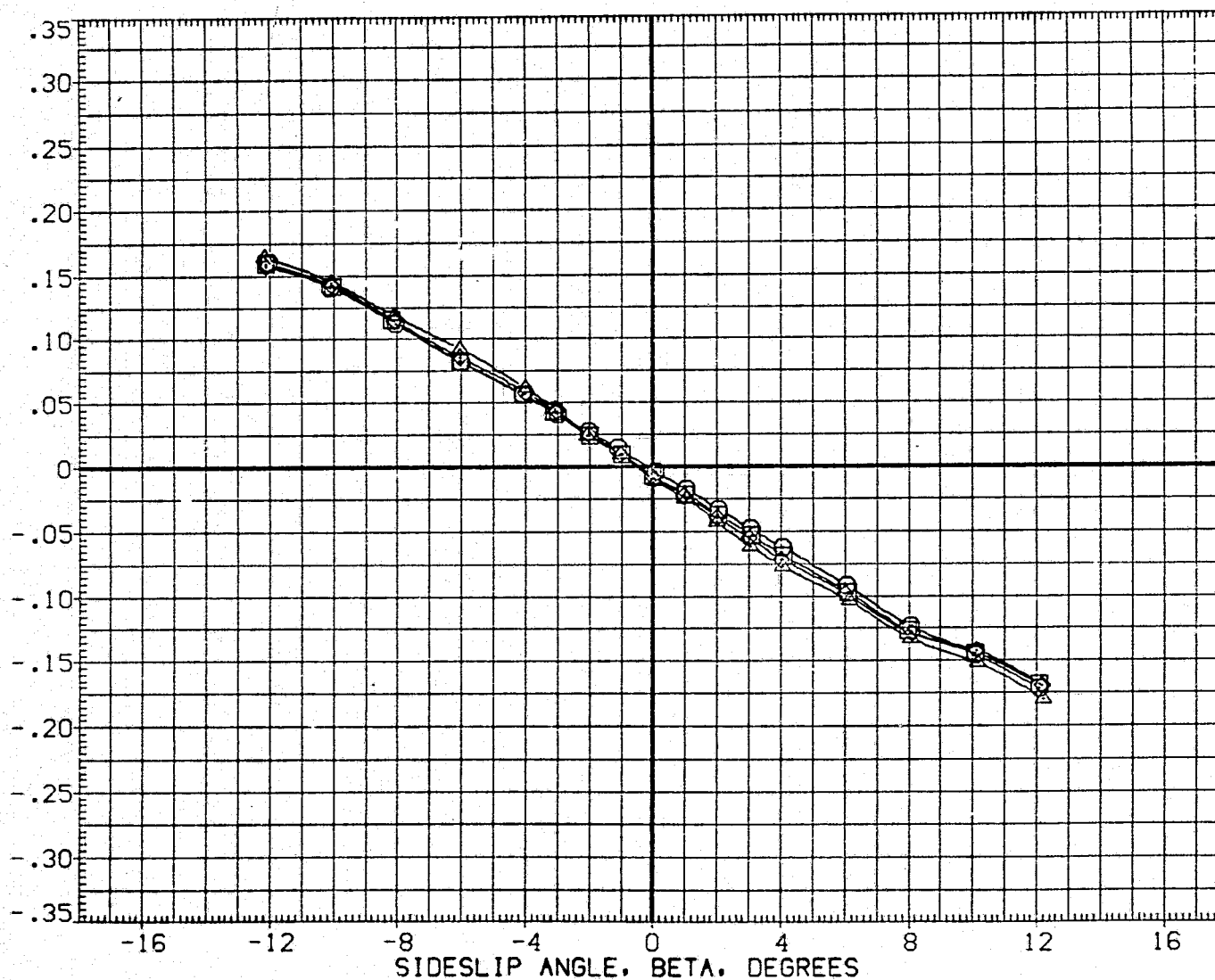


FIG.203 747+ORB(4 DEG)+TIP FINS, FLAPS UP, ALPHA1=8, RUDDER=10/10

ORB

CA5 ORB TC5 AT38.3 (PRES. K1 FO H15.6 V9.1)(XGM123)

SYMBOL	MACH	PARAMETRIC VALUES
○	.299	ALPHA I 8.000 STAB -2.000
□	.499	RUD-U 10.000 RUD-L 10.000
◇	.600	ELV-1B .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 IORB 4.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XM RP	1109.0000	IN. XO
YM RP	.0000	IN. YO
ZM RP	375.0000	IN. ZO
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

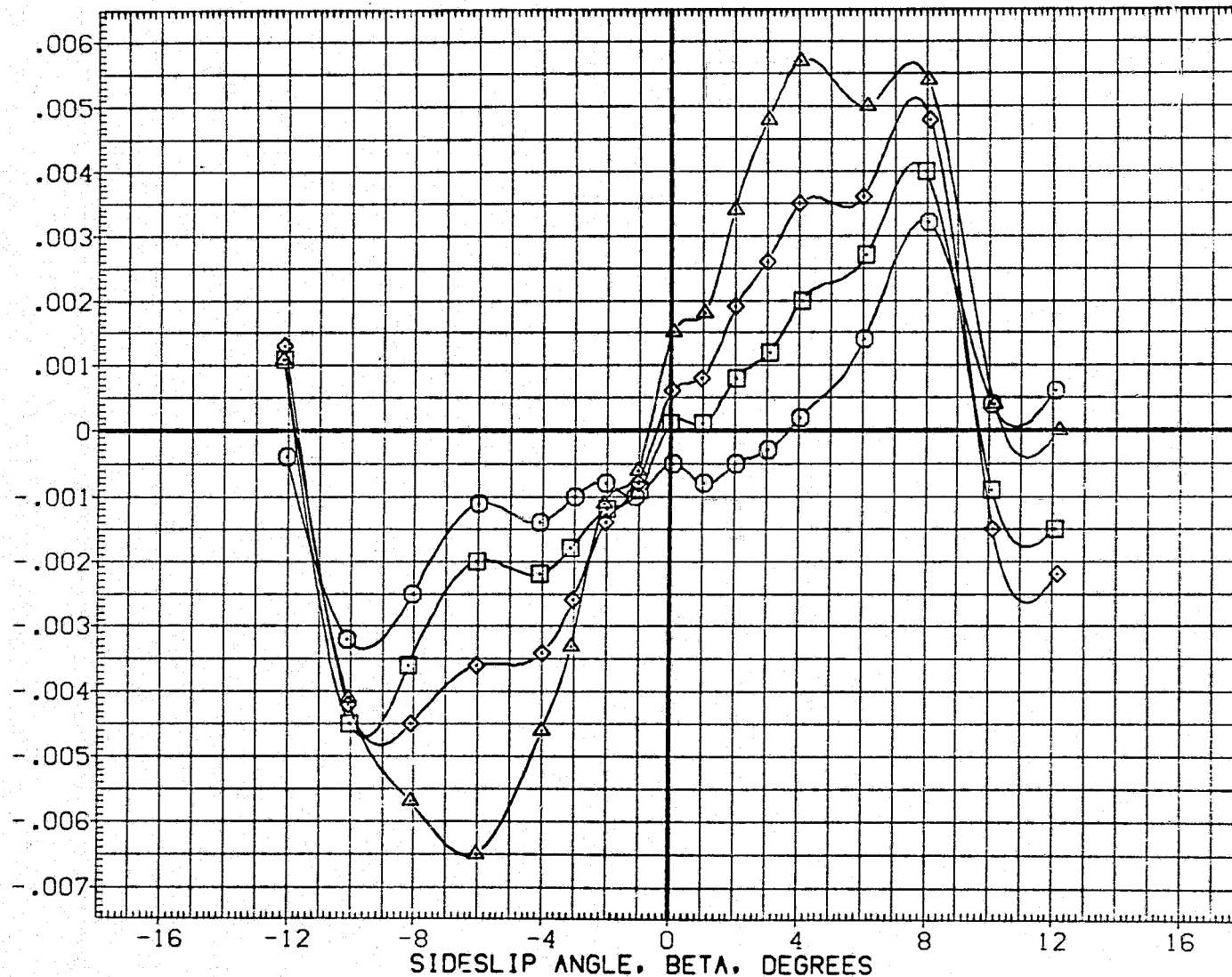


FIG.203 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA I=8,RUDDER=10/10

ORB

SYMBOL	MACH	PARAMETRIC VALUES			
○	.299	ALPHA I	8.000	STAB	-2.000
□	.499	RUD-U	10.000	RUD-L	10.000
◇	.600	ELV-IB	.000	ELV-OB	3.000
△	.700	S1-2	.000	S3-4	.000
		S5-6	.000	10RB	4.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

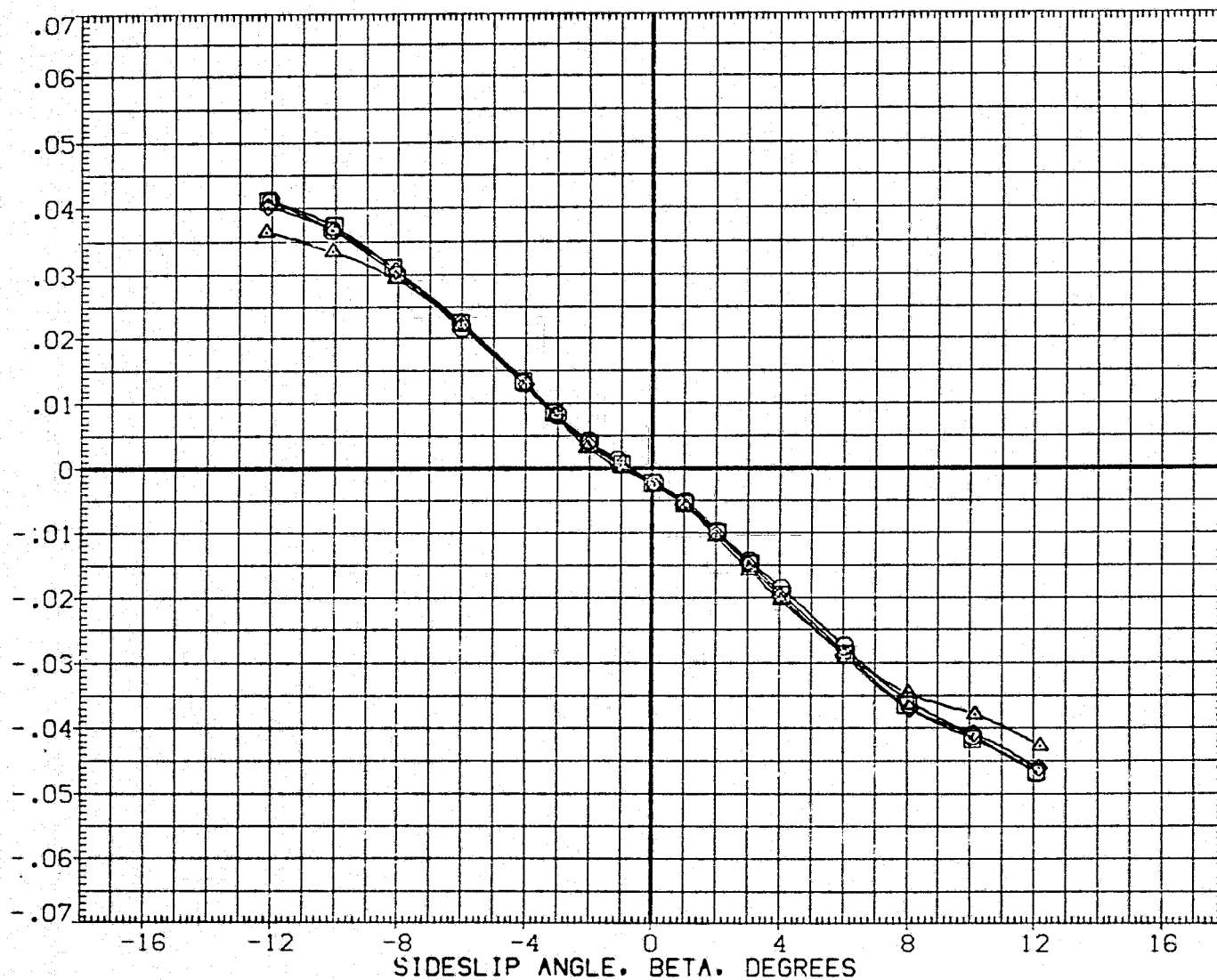


FIG. 203 747+ORB(4 DEG)+TIP FINS, FLAPS UP, ALPHA I=8, RUDDER=10/10

ORB

CA5 K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )(RGM124)

SYMBOL  
○  
□  
◇  
△

MACH

ALPHA1  
RUD-U  
ELV-1B  
S1-2  
S5-6

PARAMETRIC VALUES

6.000 STAB -2.000  
10.000 RUD-L 10.000  
.000 ELV-OB 3.000  
.000 S3-4 .000  
.000 TORB 4.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
LREF 327.8000 IN.  
BREF 2348.0000 IN.  
XMRP 1339.9100 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0300

SIDE FORCE COEFFICIENT, CY

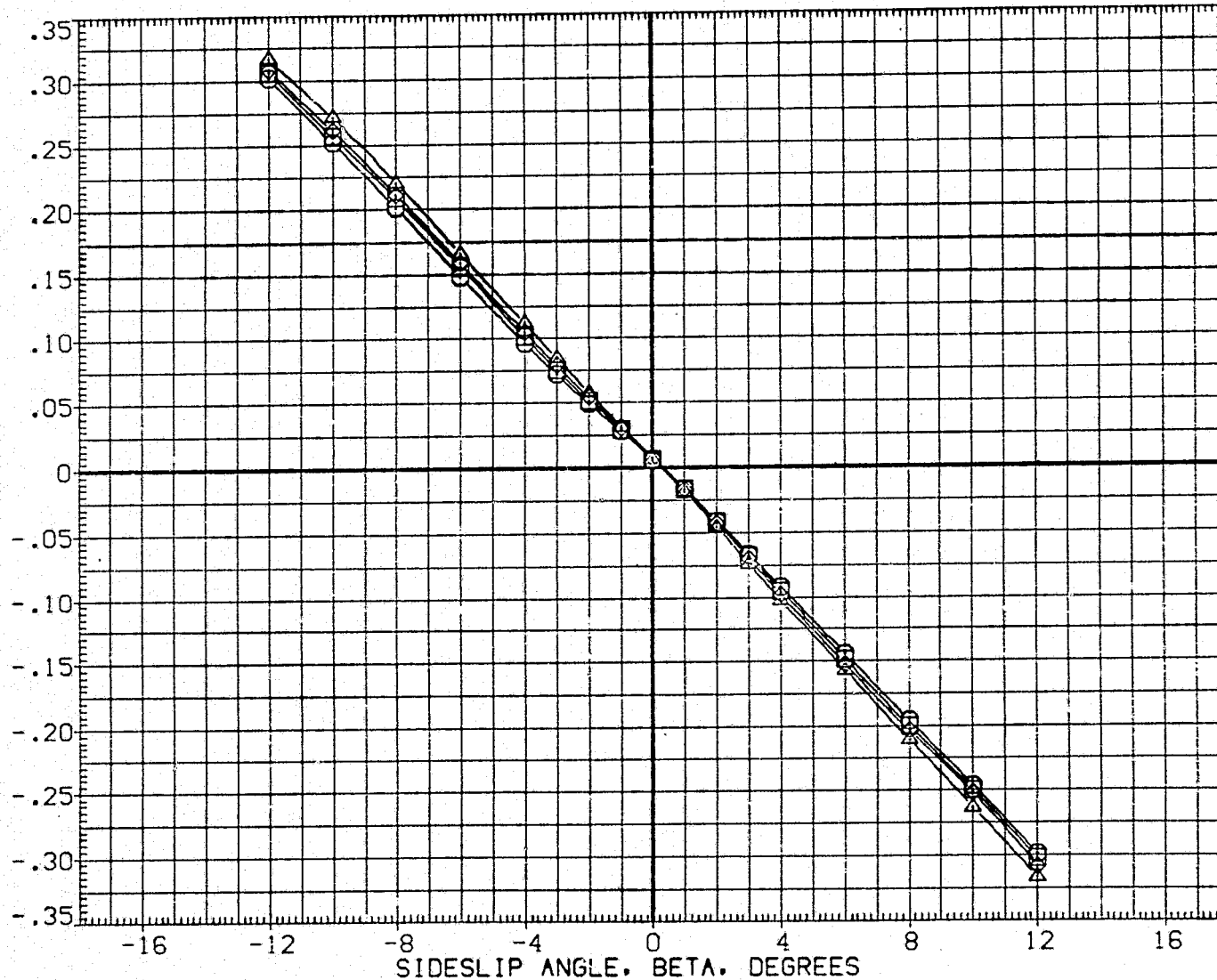


FIG.204 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA1=6,RUDDER=10/10

CA5 K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )(RGM124)

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA1 6.000 STAB -2.000
□	.500	RUD-U 10.000 RUD-L 10.000
◇	.600	ELV-1B .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 ICRB 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

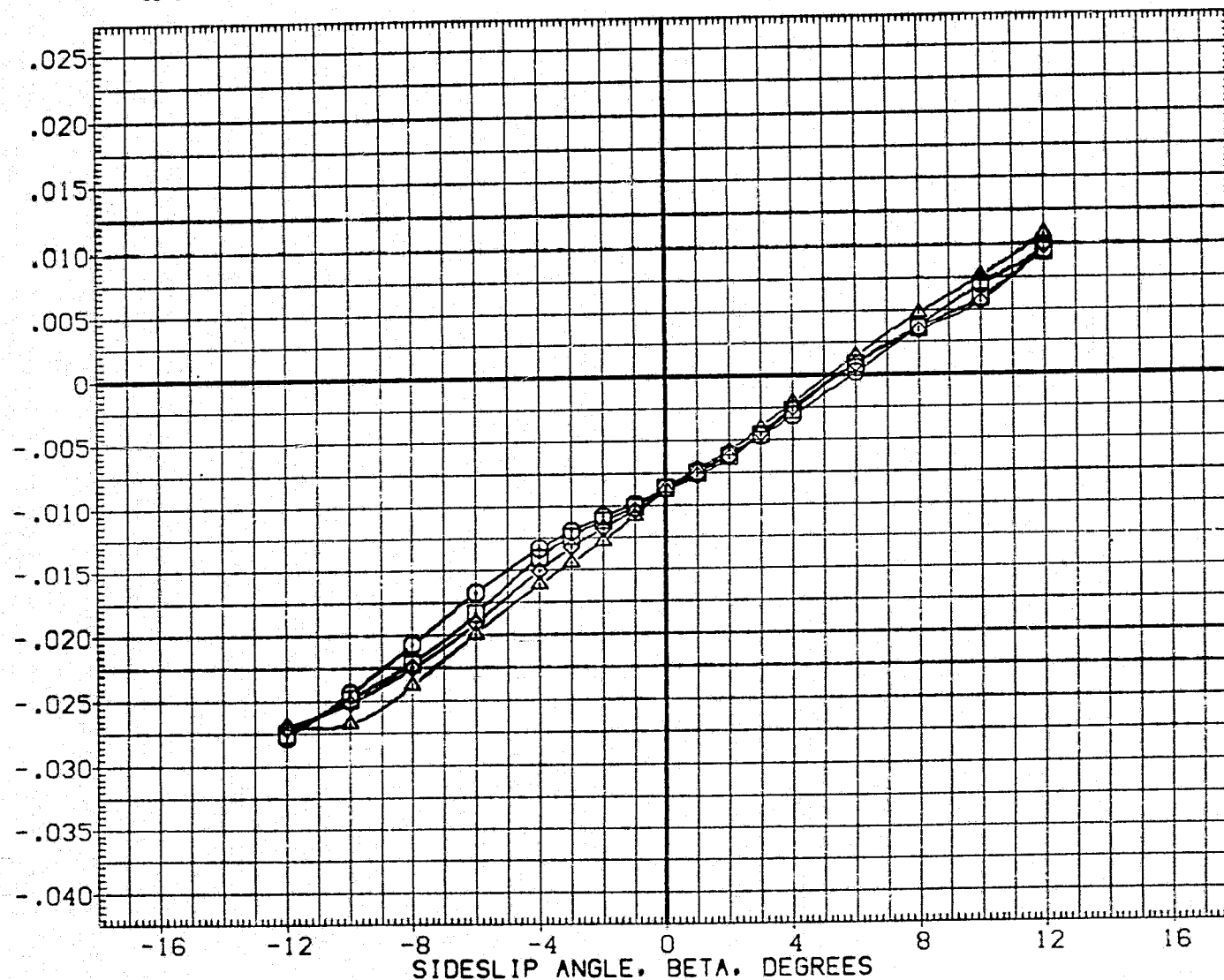


FIG.204 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA1=6,RUDDER=10/10

CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )(RGM124)

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA1 6.000 STAB -2.000
□	.500	RUD-U 10.000 RUD-L 10.000
◇	.600	ELV-1B .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 10RB 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

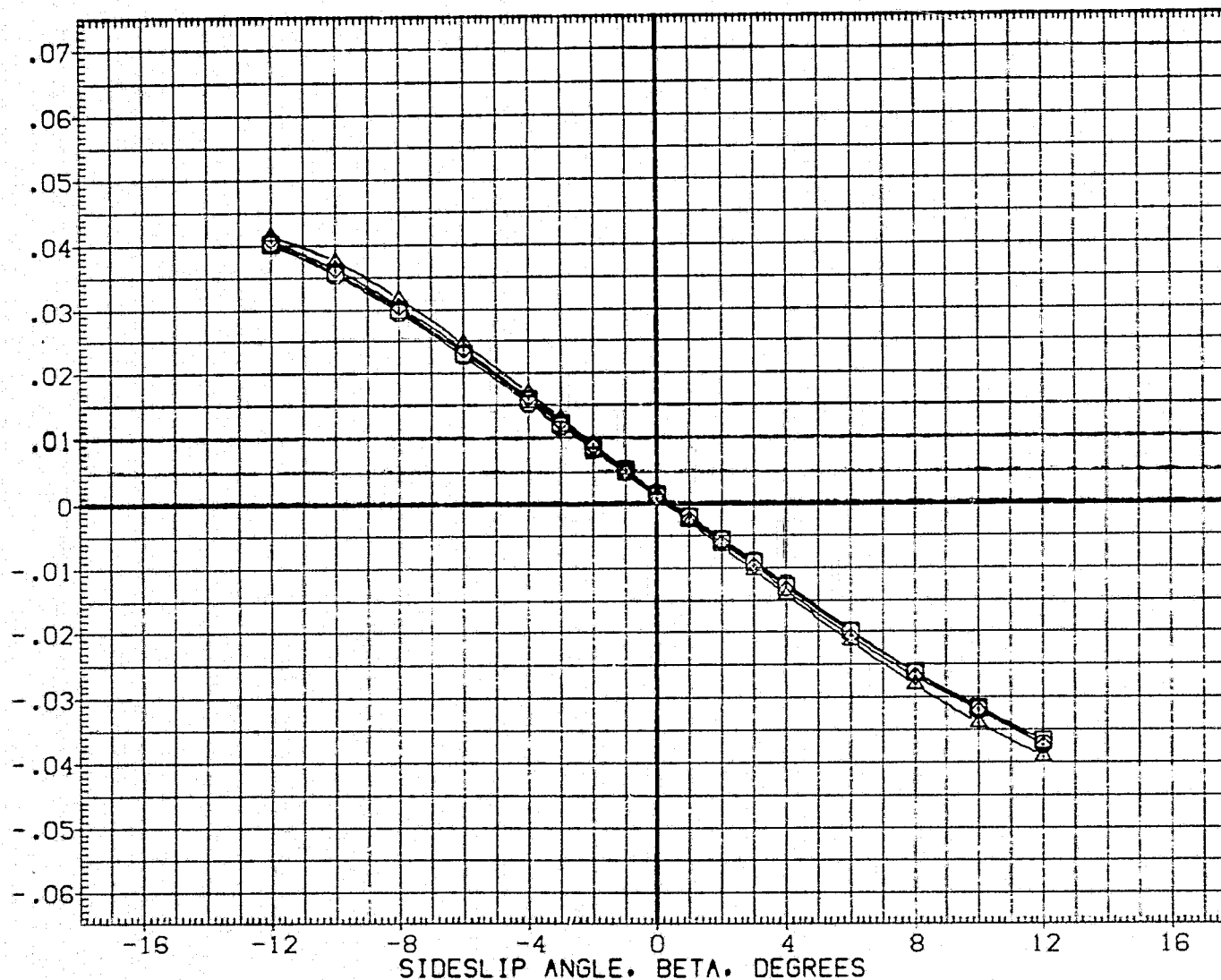


FIG.204 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA1=6,RUDDER=10/10

TOTAL

SYMBOL

○  
□  
◇  
△

MACH

.300 ALPHA1  
.500 RUD-U  
.600 ELV-1B  
.700 S1-2  
SS-6

PARAMETRIC VALUES

6.000 STAB -2.000  
10.000 RUD-L 10.000  
.000 ELV-09 3.000  
.000 S3-4 .000  
.000 ICRB 4.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
LREF 327.8000 IN.  
BREF 2348.0000 IN.  
XMRP 1339.9100 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0300

INCREMENTAL SIDE FORCE COEFFICIENT(STABILITY AXIS), DCY

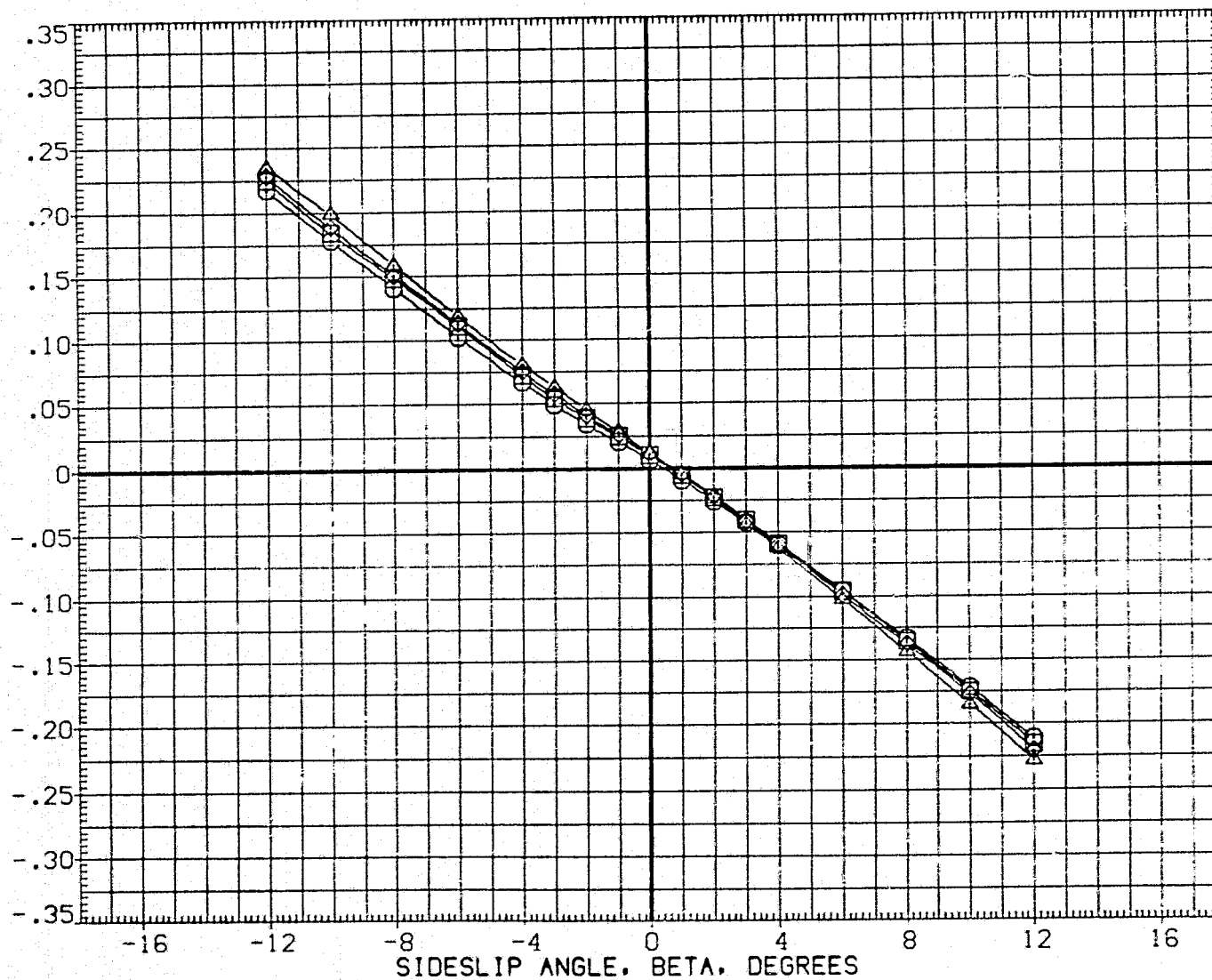


FIG.205 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA1=6,RUDDER=10/10

747

PAGE 716



CA5 K1 F0 H15.6 V9.1 MINUS ORB TC5 AT38.3 (BGM124)

SYMBOL	MACH	PARAMETRIC VALUES				REFERENCE INFORMATION	
○	.300	ALPHA I	6.000	STAB	-2.000	SREF	5500.0000 SQ.FT.
□	.500	RUD-U	10.000	RUD-L	10.000	LREF	327.8000 IN.
◇	.600	ELV-1B	.000	ELV-0B	3.000	BREF	2348.0000 IN.
△	.700	S1-2	.000	S3-4	.000	XMRP	1339.9100 IN. XC
		S5-6	.000	10RB	4.000	YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

INCREMENTAL YAWING MOMENT COEFFICIENT (STABILITY AXIS), DCLN

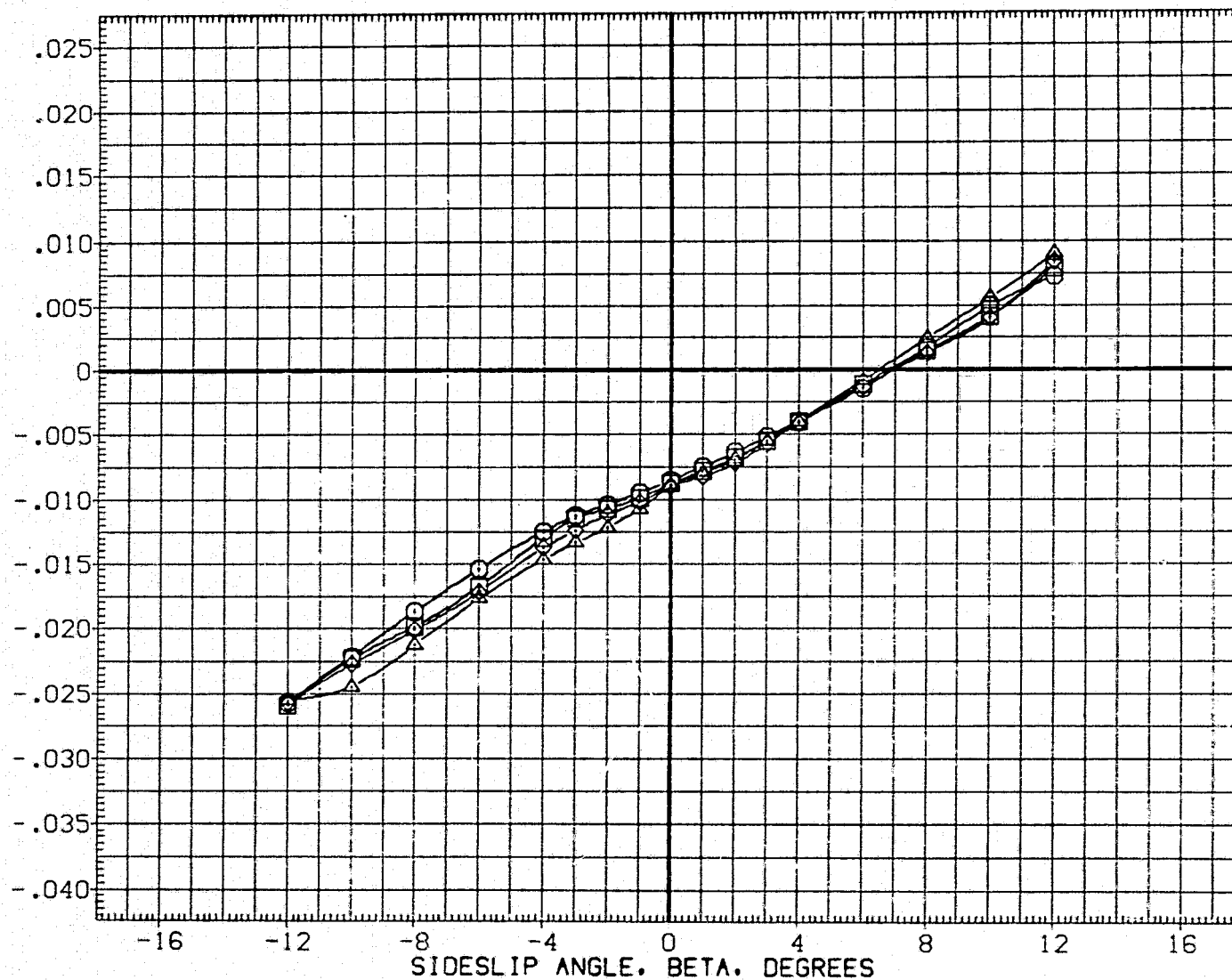


FIG.205 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA I=6,RUDDER=10/10

747

SYMBOL	MACH	PARAMETRIC VALUES			
○	.300	ALPHA1	6.000	STAB	-2.000
□	.500	RUD-U	10.000	RUD-L	10.000
◇	.600	ELV-19	.000	ELV-08	3.000
△	.700	S1-2	.000	S3-4	.000
		S5-6	.000	10RB	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

INCREMENTAL ROLLING MOMENT COEFFICIENT(STABILITY AXIS), DCSL

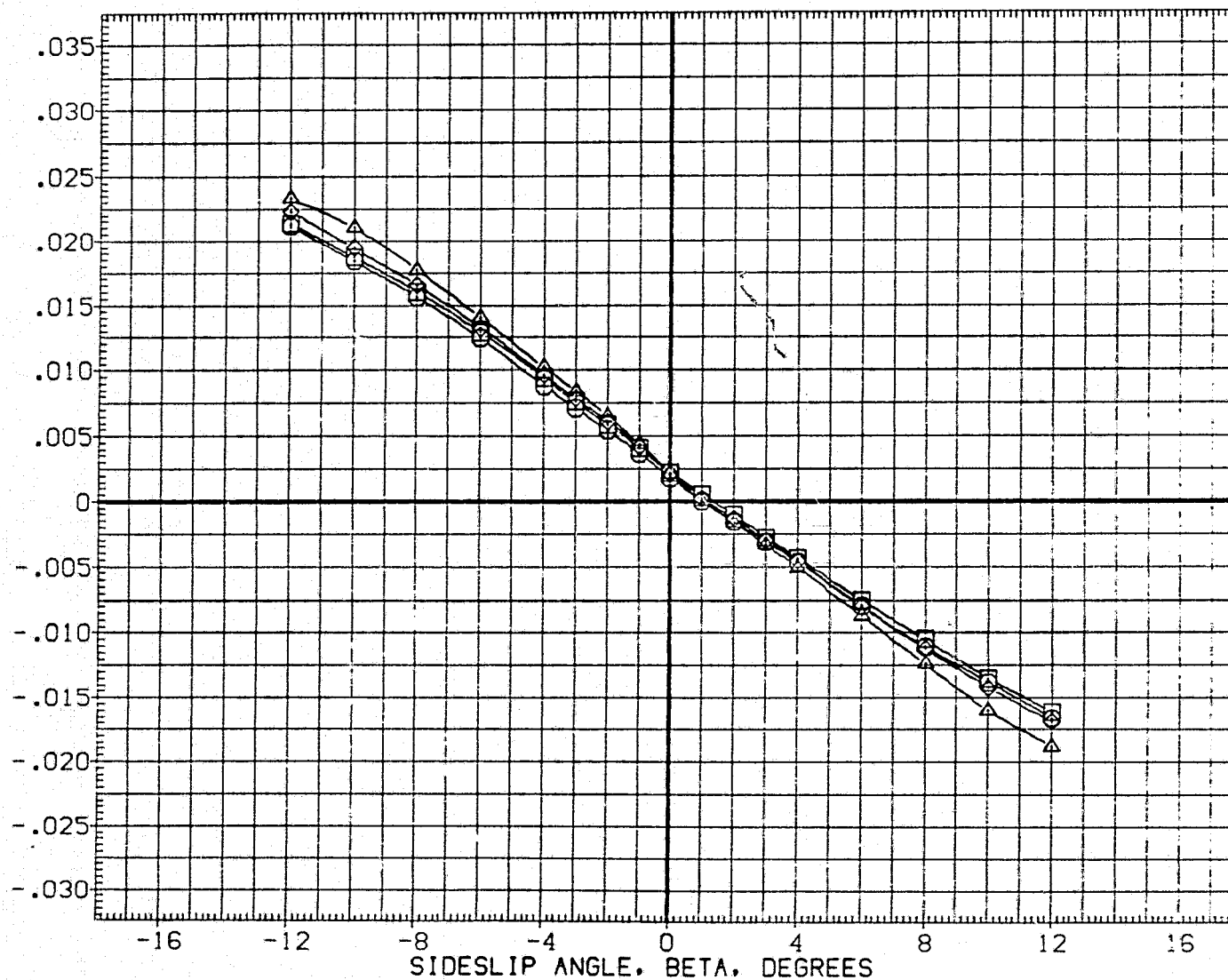


FIG.205 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA1=6,RUDDER=10/10

747

CA5 ORB TC5 AT38.3 (PRES. K1 FO H15.6 V9.1)(XGM124)

SYMBOL

○  
□  
◇  
△

MACH

.300  
.500  
.601  
.700

ALPHA1  
RUD-U  
ELV-1B  
S1-2  
S5-6

PARAMETRIC VALUES

6.000 STAB -2.000  
10.000 RUD-L 10.000  
.000 ELV-OB 3.000  
.000 S3-4 .000  
.000 10RB 4.000

REFERENCE INFORMATION

SREF 2690.0000 SQ.FT.  
LREF 474.8100 IN.  
BREF 935.6800 IN.  
XMRP 1109.0000 IN. X0  
YMRP .0000 IN. Y0  
ZMRP 375.0000 IN. Z0  
SCALE .0300

SIDE FORCE COEFFICIENT, CY

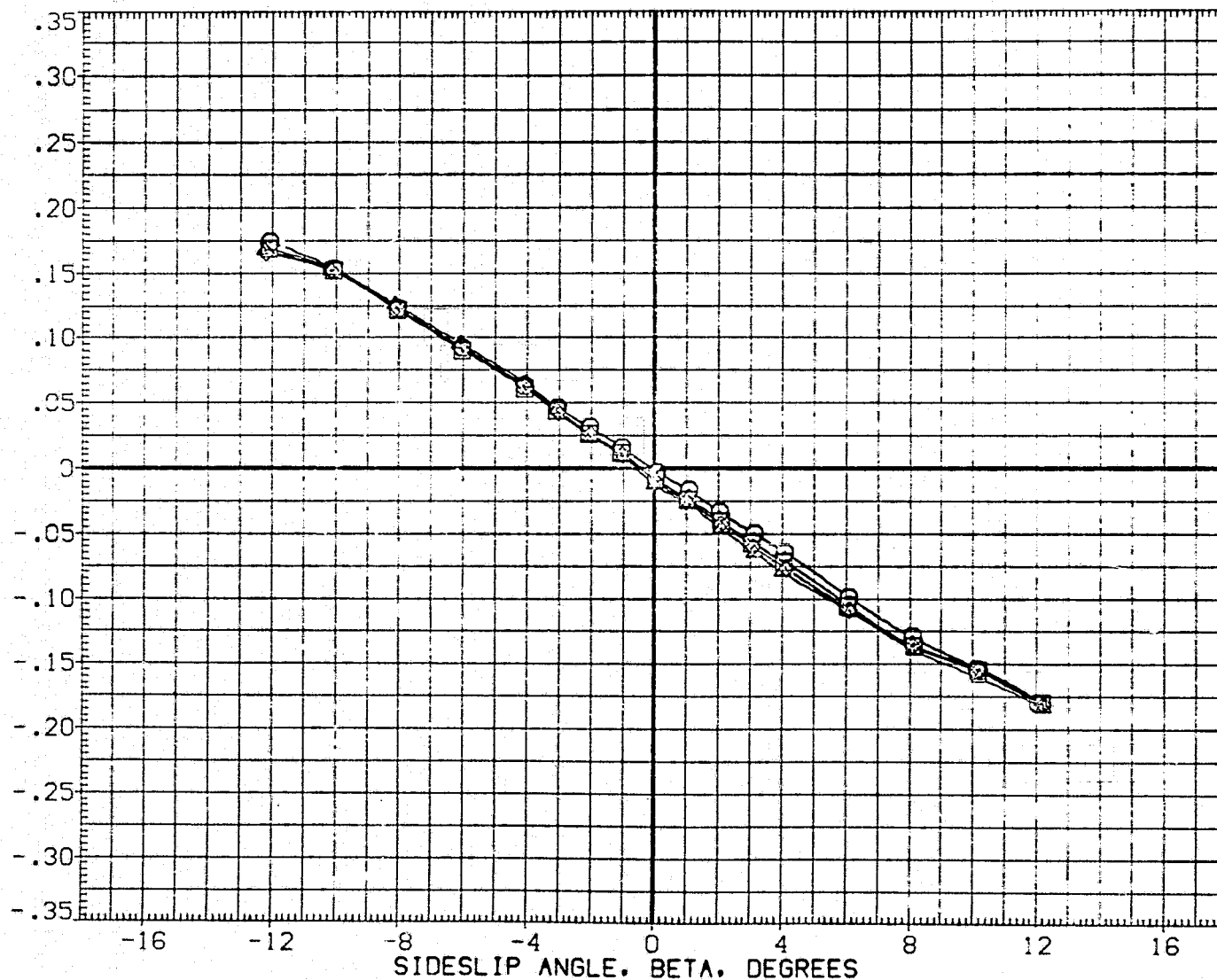


FIG.206 747+ORB(4 DEG)+TIP FINS, FLAPS UP, ALPHA1=6, RUDDER=10/10

ORB

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA I 6.000 STAB -2.000
□	.500	RUD-U 10.000 RUD-L 10.000
◇	.601	ELV-1B .000 ELV-0B 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 10RB 4.000

REFERENCE INFORMATION		
SREF	2690.0000	50.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

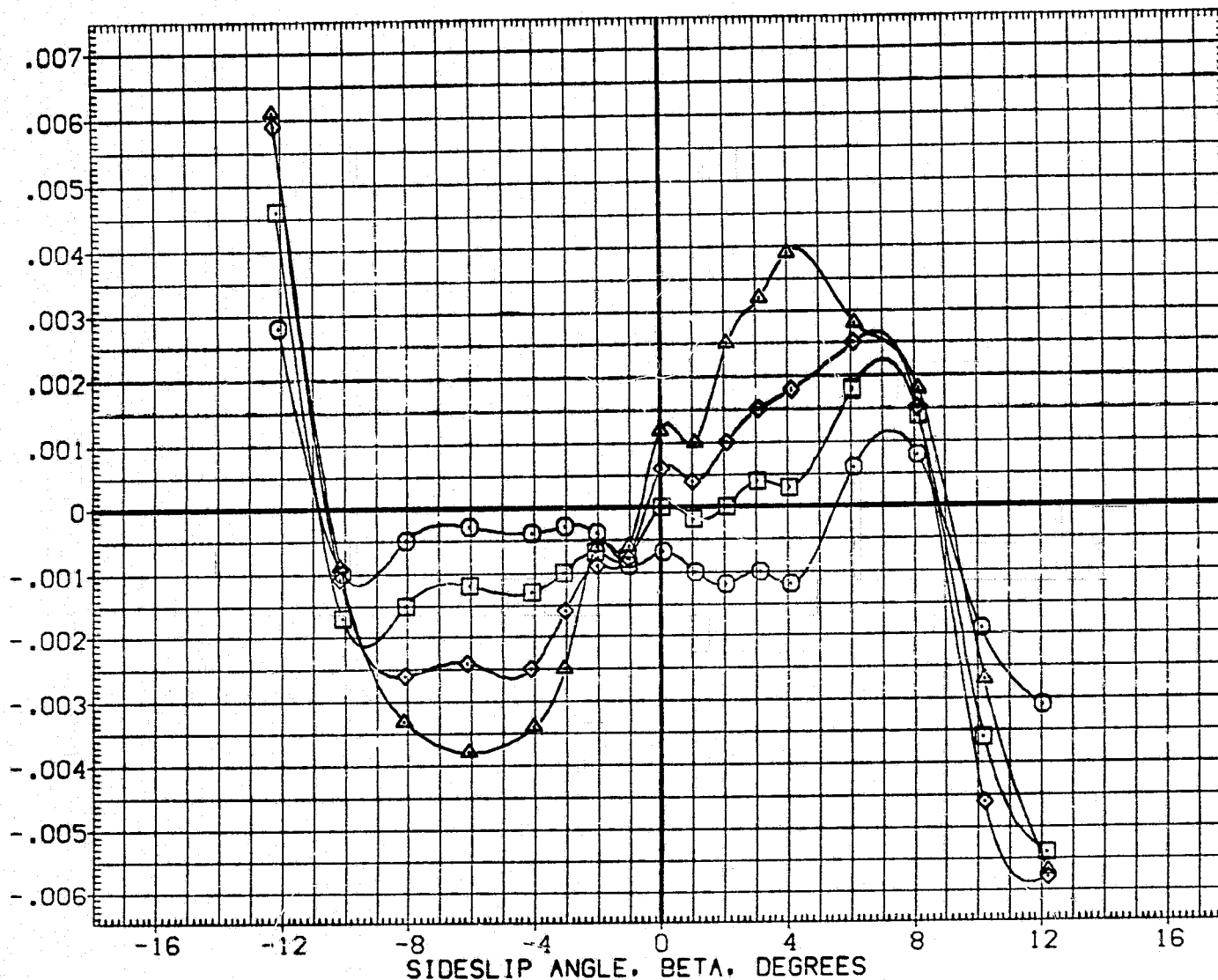


FIG.206 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA I=6,RUDDER=10/10

ORB

CA5 ORB TC5 AT38.3 (PRES. K1 FO H15.6 V9.1)(XGM124)

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA I 6.000 STAB -2.000
□	.500	RUD-U 10.000 RUD-L 10.000
◇	.601	ELV-1B .000 ELV-0B 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 10RB 4.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

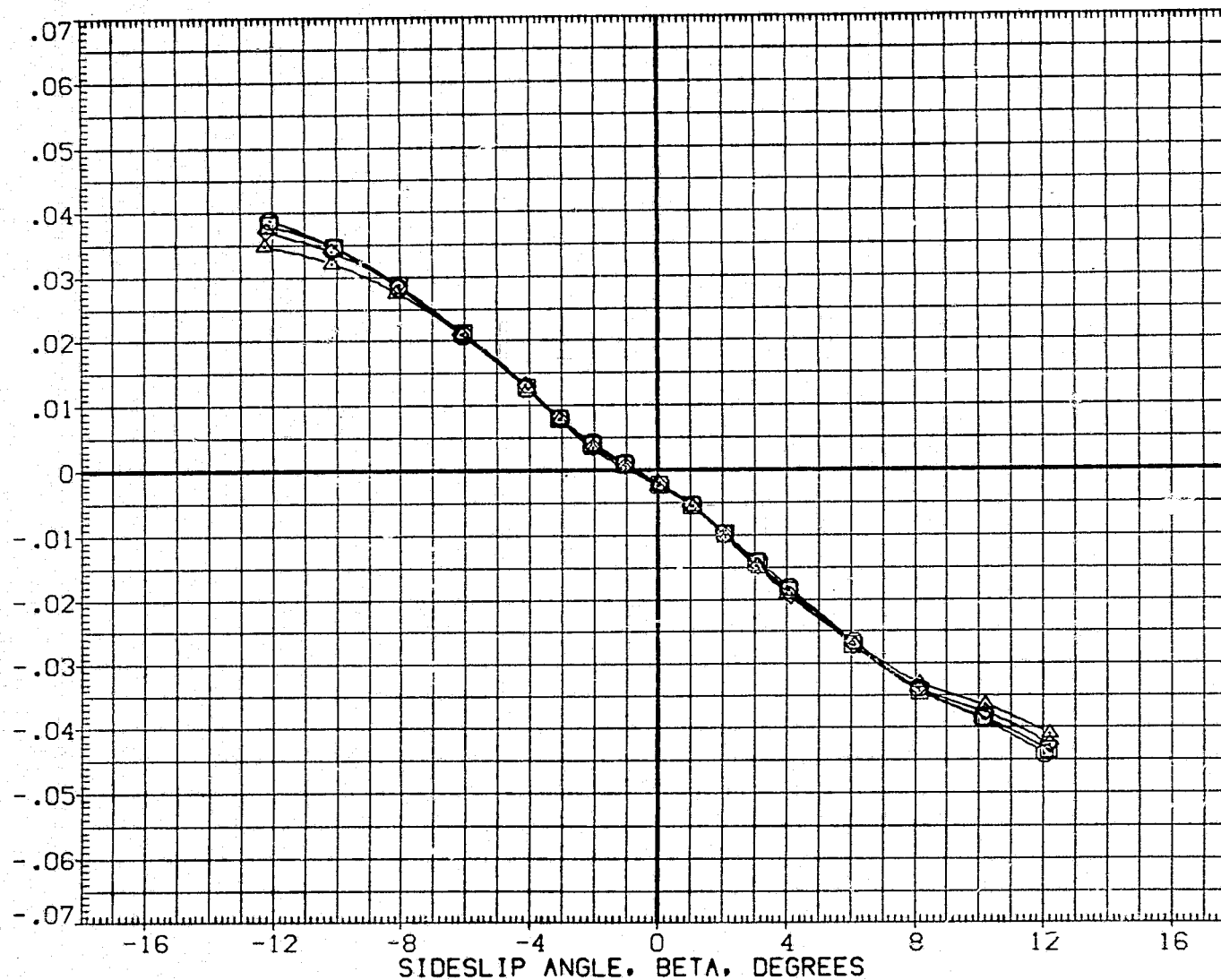


FIG.206 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA I=6, RUDDER=10/10

ORB

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA I 6.000 STAB -2.000
□	.500	RUD-U .000 RUD-L .000
◇	.600	ELV-1B .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 IORB 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

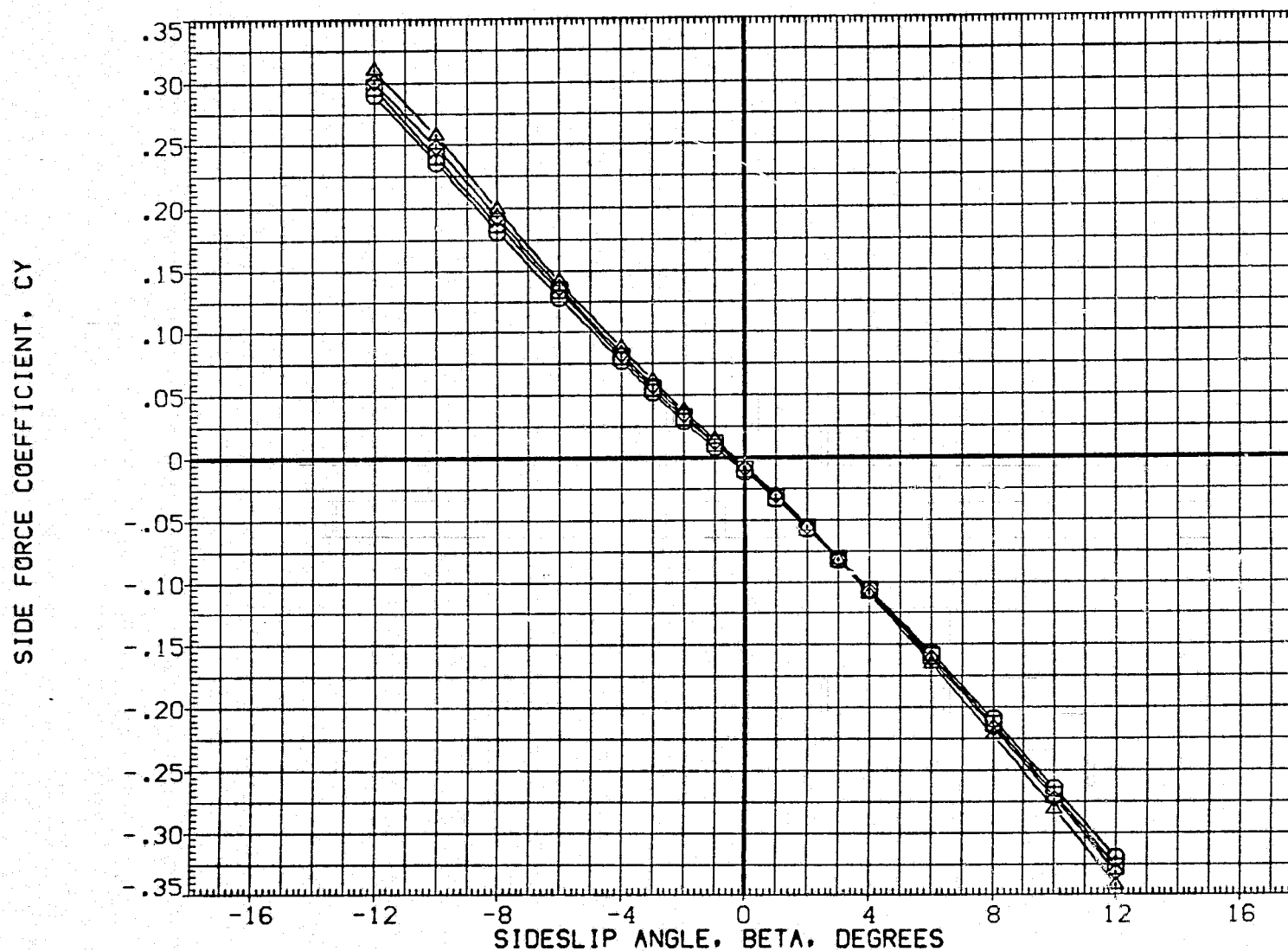


FIG. 207 747+ORB(4 DEG)+TIP FINS, FLAPS UP, ALPHA I=6, TAIL CONE OFF

TOTAL

CA5 K1 F0 H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )(RGM127)

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA I 6.000 STAB -2.000
□	.500	RUD-U .000 RUD-L .000
◇	.600	ELV-1B .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 1ORB 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

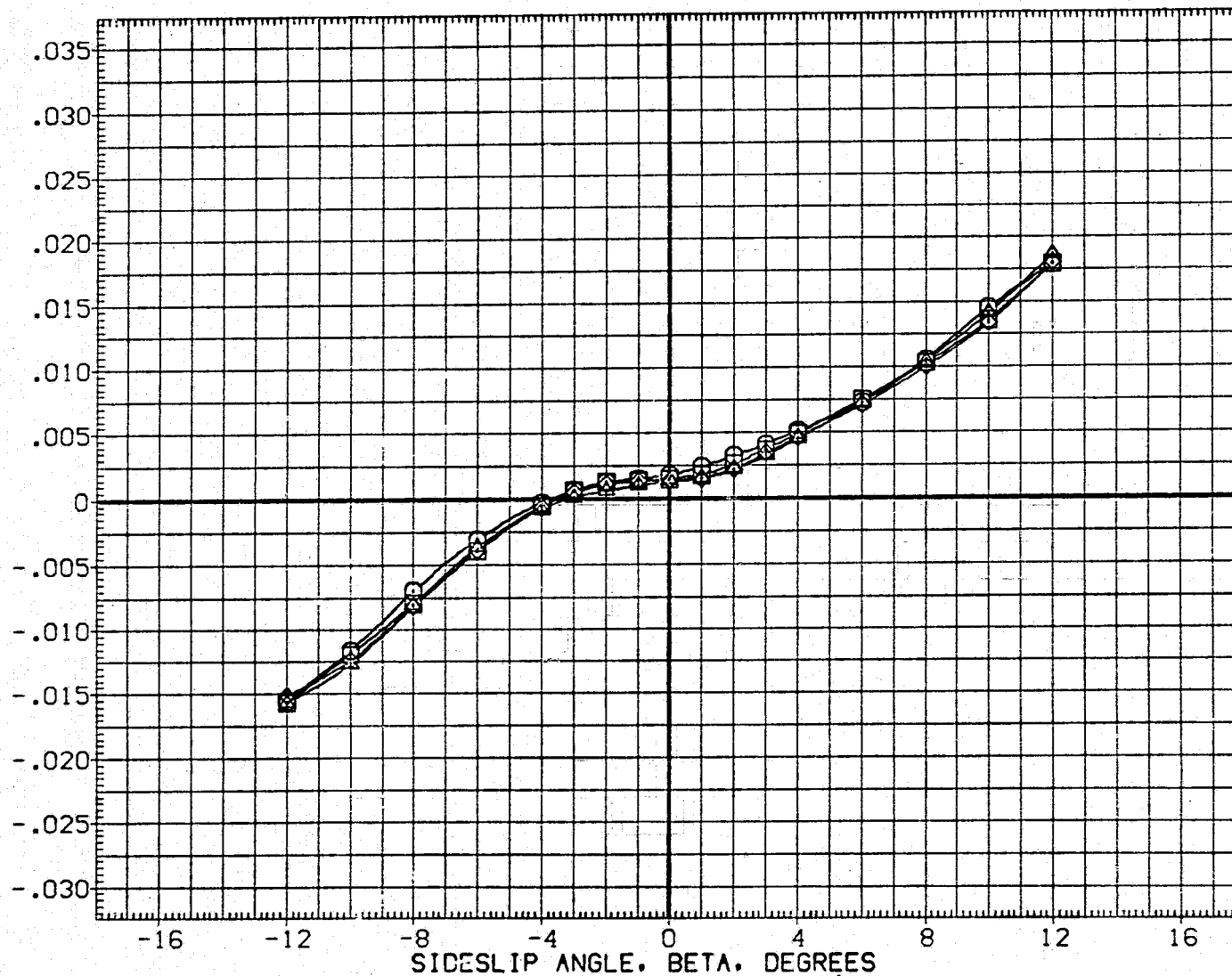


FIG.207 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA I=6,TAIL CONE OFF

TOTAL

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA I 6.000 STAB -2.000
□	.500	RUD-U .000 RUD-L .000
◇	.600	ELV-1B .000 ELV-0B 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 10RB 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

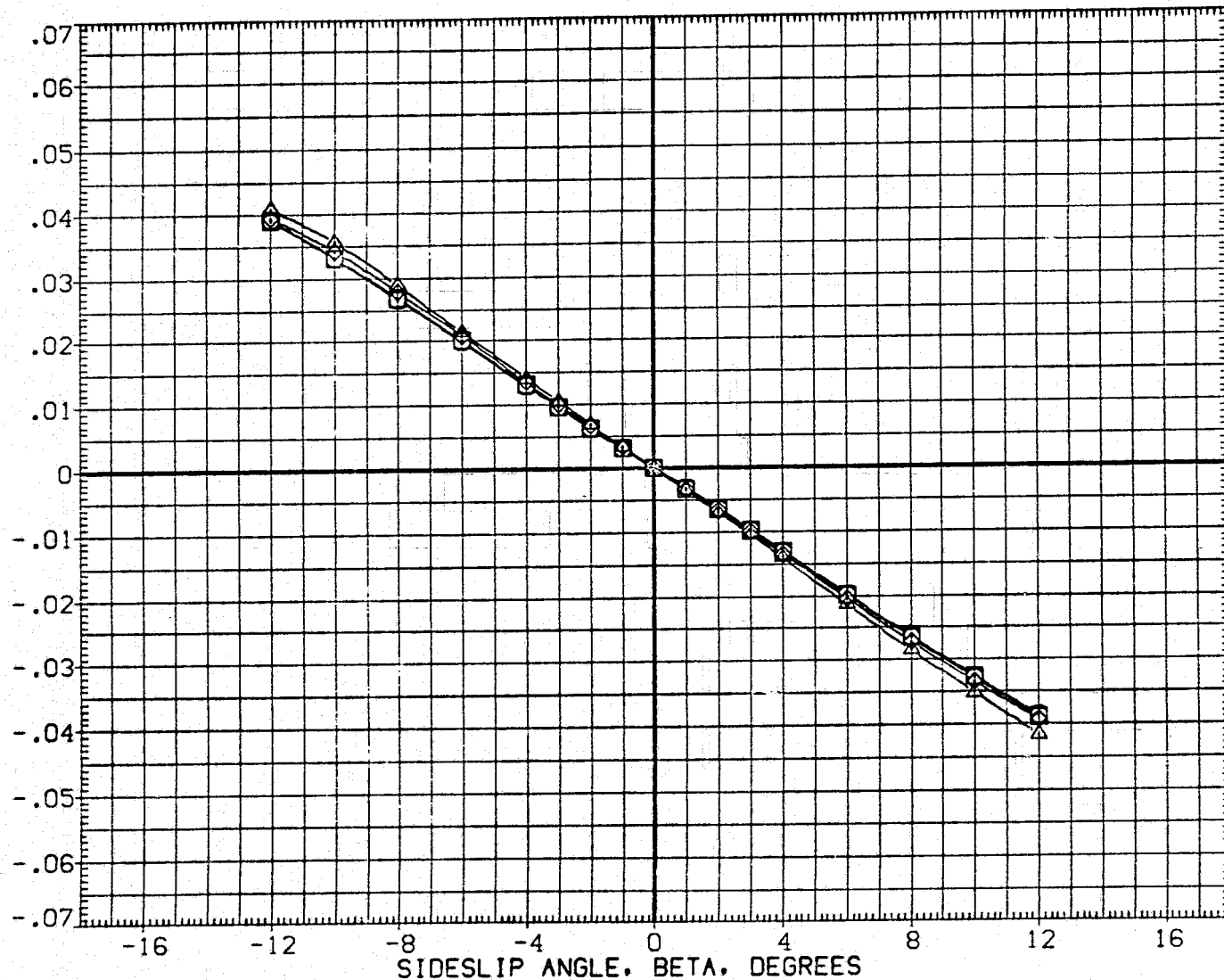


FIG.207 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA I=6,TAIL CONE OFF

TOTAL



CA5 K1 F0 H15.6 V9.1 MINUS ORB NOZ AT38.3 (BGM127)

SYMBOL  
○  
□  
◇  
△

MACH

ALPHA I

PARAMETRIC VALUES

6.000

STAB

-2.000

RUD-U

.000

RUD-L

.000

ELV-1B

.000

ELV-OB

3.000

S1-2

.000

S3-4

.000

S5-6

.000

IORB

4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

INCREMENTAL SIDE FORCE COEFFICIENT (STABILITY AXIS), DCY

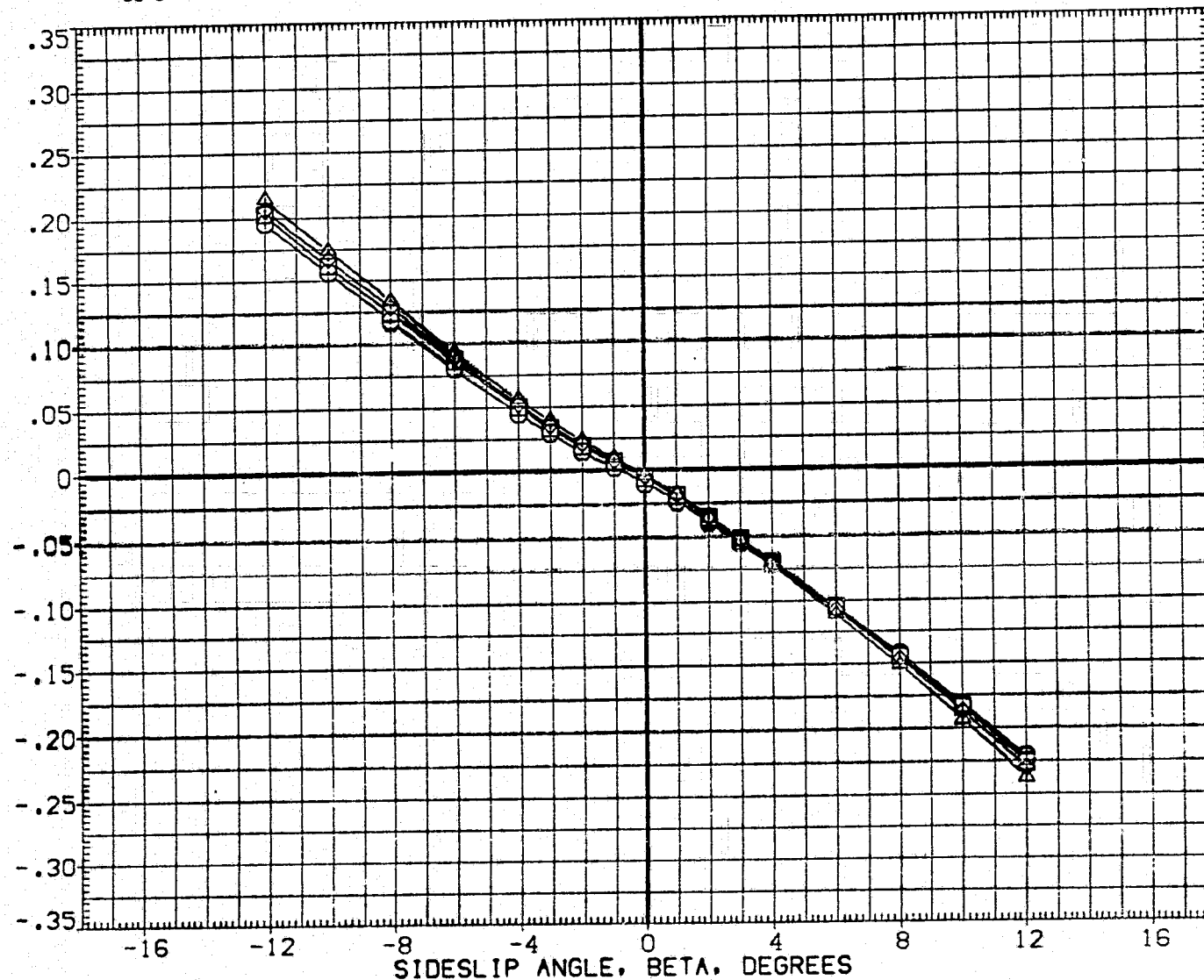


FIG.208 747+ORB(4 DEG)+TIP FINS, FLAPS UP, ALPHA I=6, TAIL CONE OFF

CAS K1 FO H15.6 V9.1 MINUS ORB NOZ AT38.3 (BGM127)

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA1 6.000 STAB -2.000
□	.500	RUD-U .000 RUD-L .000
◇	.600	ELV-1B .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 TORB 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

INCREMENTAL YAWING MOMENT COEFFICIENT (STABILITY AXIS). DCLN

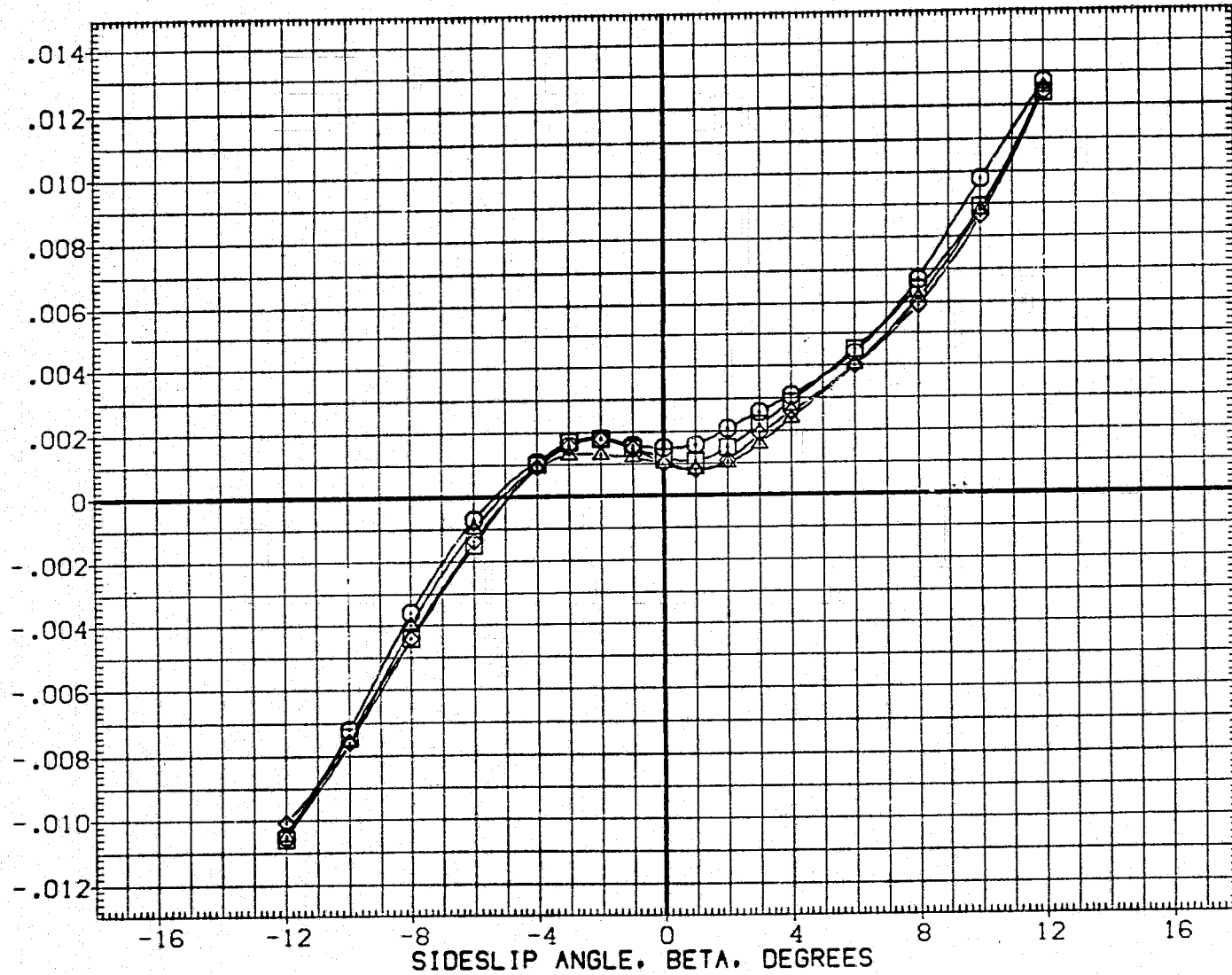


FIG.208 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA1=6,TAIL CONE OFF

CA5 K1 FO H15.6 V9.1 MINUS ORB NOZ AT38.3 (BGM127)

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA I 6.000 STAB -2.000
□	.500	RUD-U .000 RUD-L .000
◇	.600	ELV-IB .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 TORB 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRF	1339.9100	IN. XC
YMRF	.0000	IN. YC
ZMRF	190.7500	IN. ZC
SCALE	.0300	

INCREMENTAL ROLLING MOMENT COEFFICIENT(STABILITY AXIS), DCSL

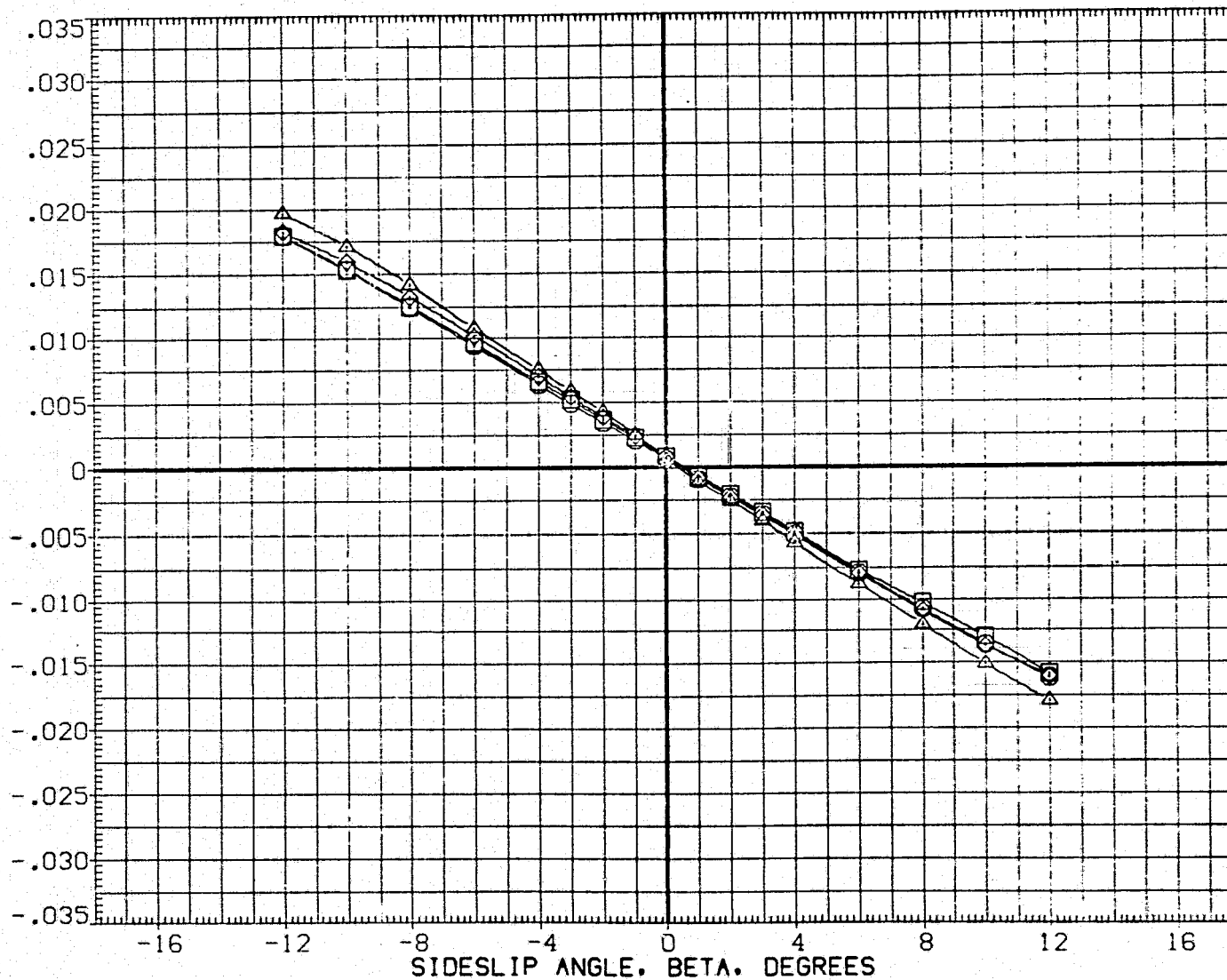


FIG.208 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA I=6,TAIL CONE OFF

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA I 6.000 STAB -2.000
□	.499	RUD-U .000 RUD-L .000
◇	.600	ELV-1B .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 10RB 4.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

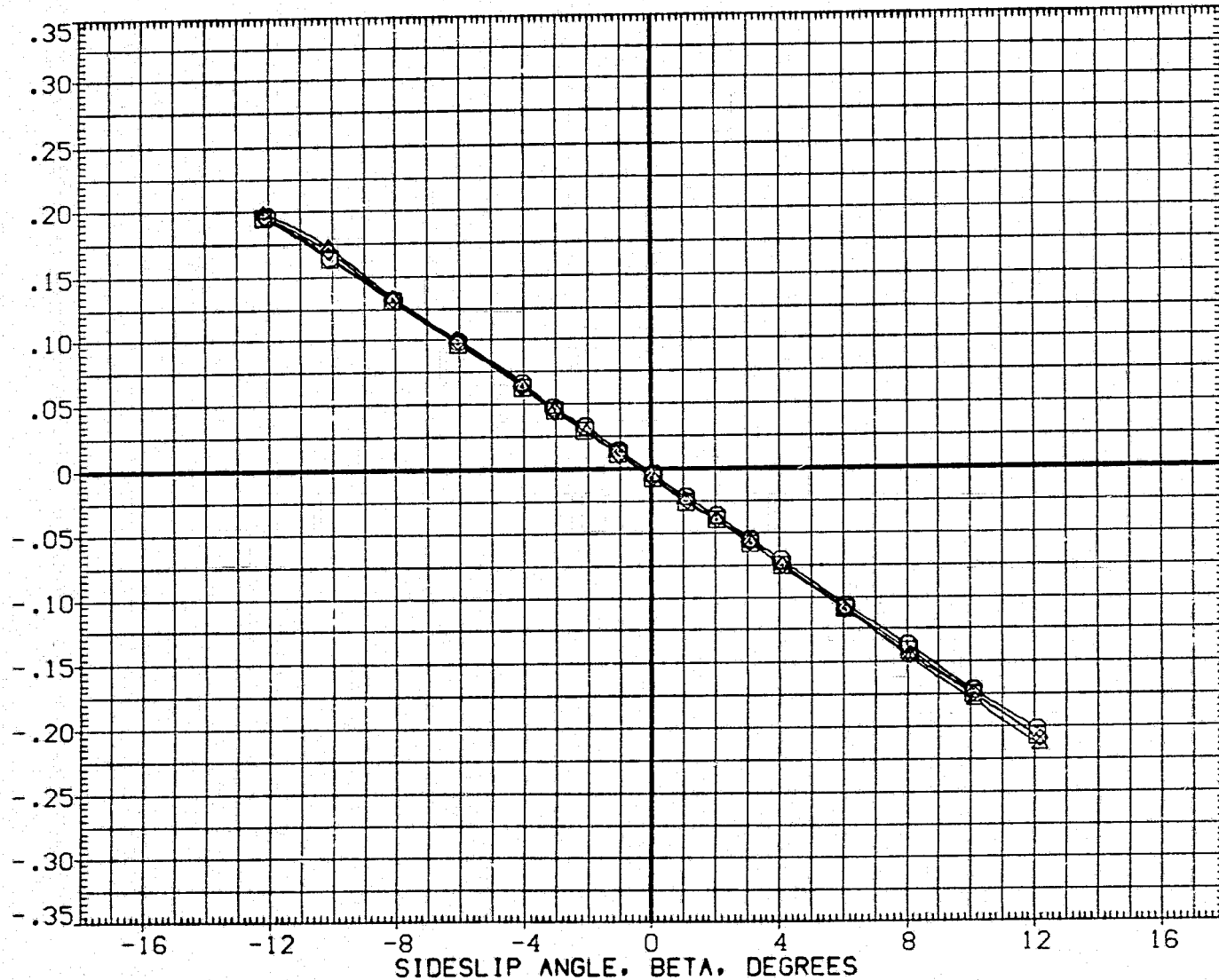
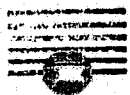


FIG.209 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA I=6,TAIL CONE OFF

ORB



CA5 ORB NOZ AT38.3 (PRES. K1 FO H15.6 V9.1)(XGM127)

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA1 6.000 STAB -2.000
□	.499	RUD-U .000 RUD-L .000
◇	.600	ELV-1B .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		SS-6 .000 IORB 4.000

REFERENCE INFORMATION		
SREF	2690.0000	SG.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

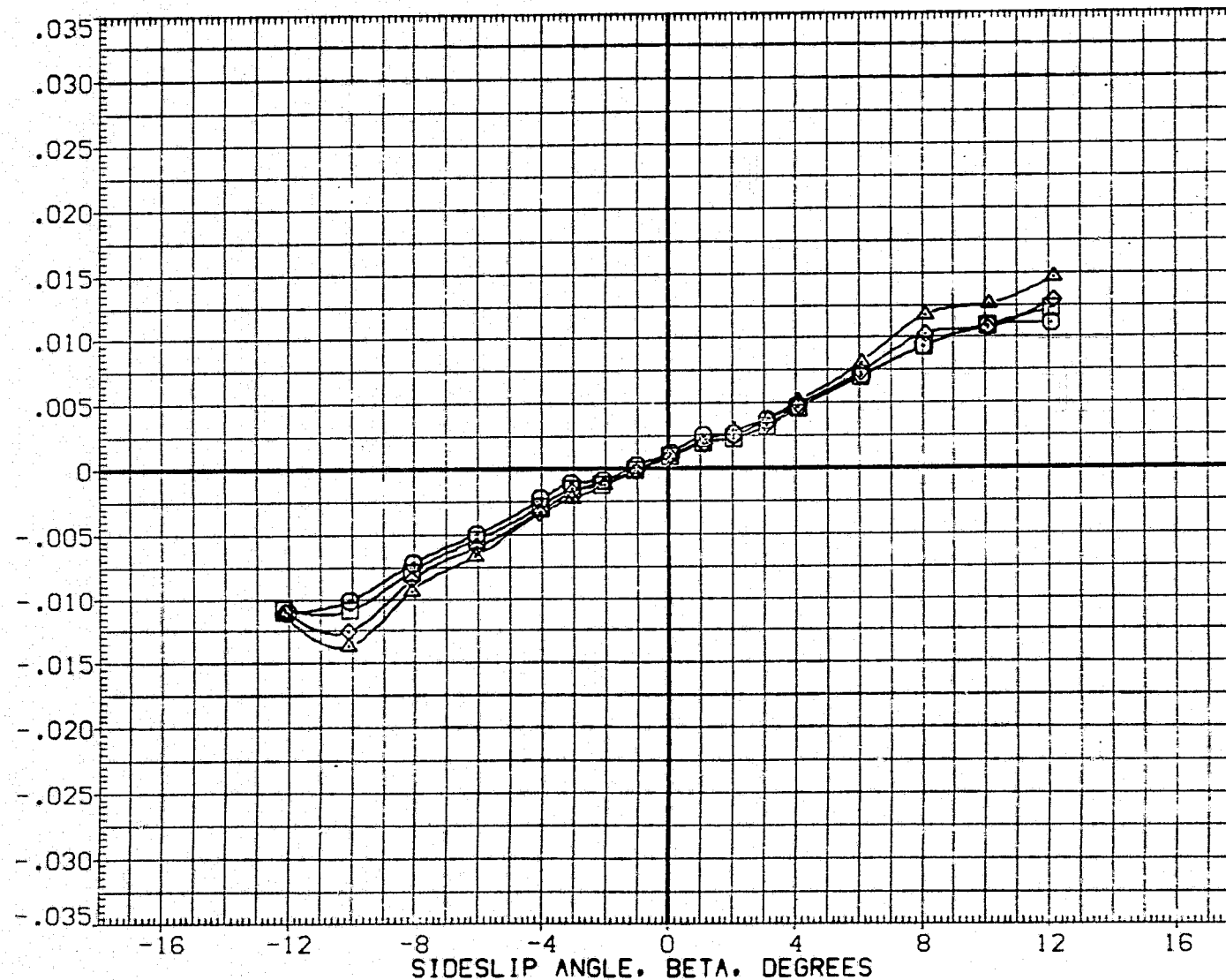


FIG.209 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA1=6,TAIL CONE OFF

ORB

SYMBOL	MACH	PARAMETRIC VALUES
○	.300	ALPHA1 6.000 STAB -2.000
□	.499	RUD-U .000 RUD-L .000
◇	.600	ELV-1B .000 ELV-OB 3.000
△	.700	S1-2 .000 S3-4 .000
		S5-6 .000 ICRB 4.000

REFERENCE INFORMATION	
SREF	2690.0000 SQ.FT.
LREF	474.8100 IN.
BREF	936.6800 IN.
XMRP	1109.0000 IN. XC
YMRP	.0000 IN. YC
ZMRP	375.0000 IN. ZC
SCALE	.0300

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

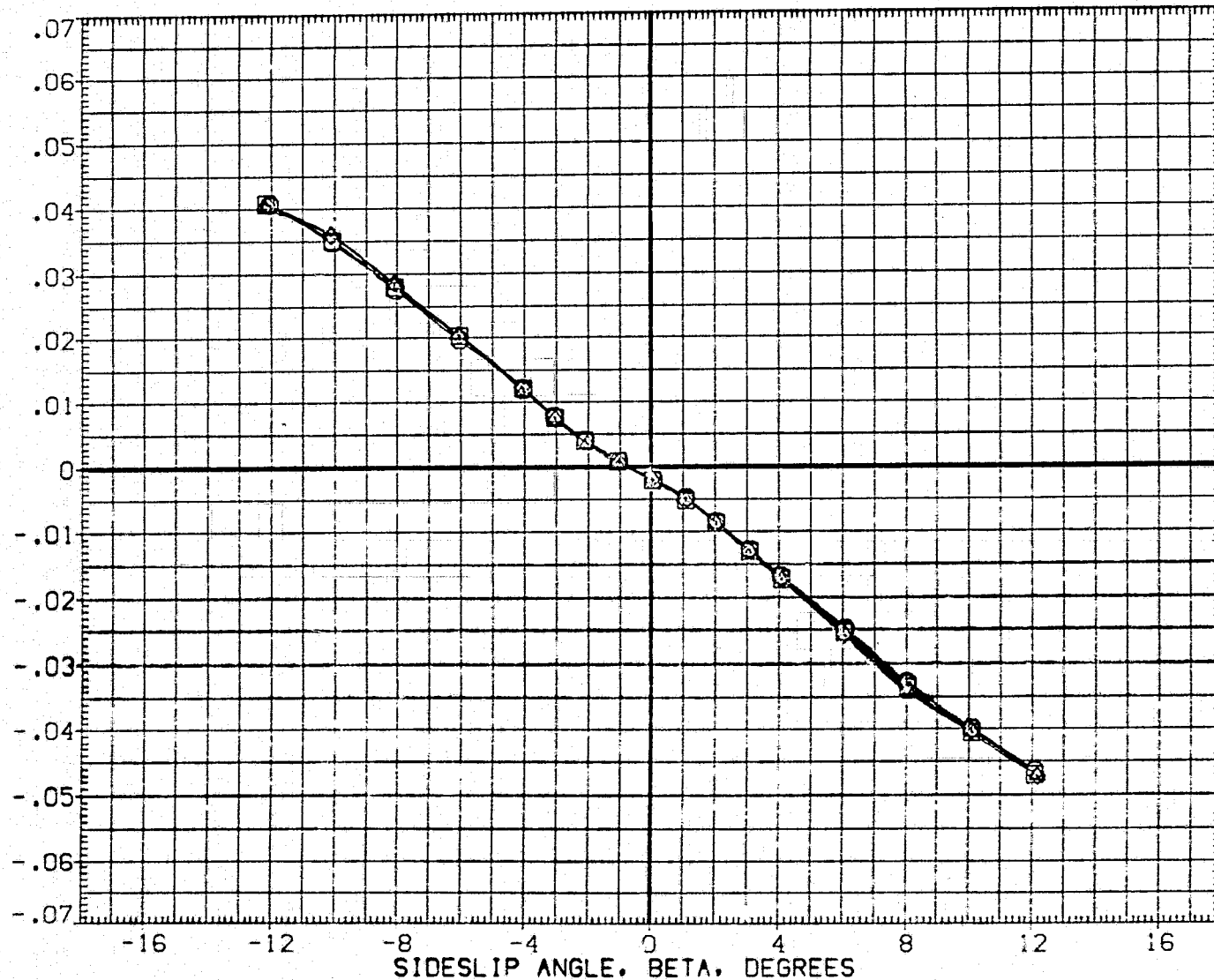


FIG.209 747+ORB(4 DEG)+TIP FINS,FLAPS UP,ALPHA1=6,TAIL CONE OFF

ORB

CA5 ORB N28 N24

(AGM130)

SYMBOL	MACH	ALPHA	PARAMETRIC VALUES
○	.300	8.000	
□	.500		
◇	.600		
△	.700		

## REFERENCE INFORMATION

SREF	2690.0000	50.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

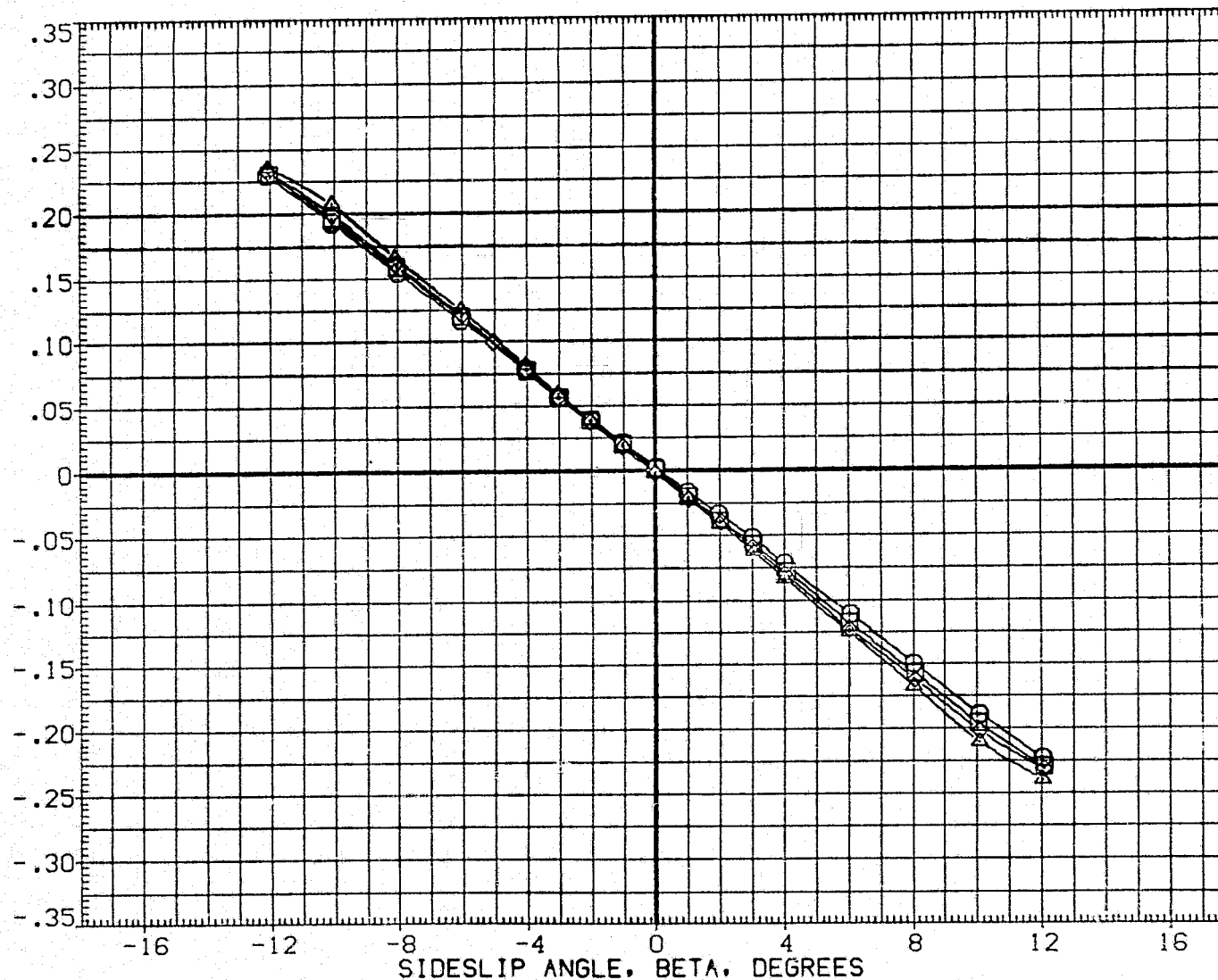


FIG.210 ORBITER ALONE, TAIL CONE OFF, ALPHA1=8 DEG

SYMBOL	MACH	ALPHA	PARAMETRIC VALUES
○	.300	8.000	
□	.500		
◇	.600		
△	.700		

REFERENCE INFORMATION		
SREF	2690.0000	SO.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRF	1109.0000	IN. X0
YMRF	.0000	IN. Y0
ZMRF	375.0000	IN. Z0
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

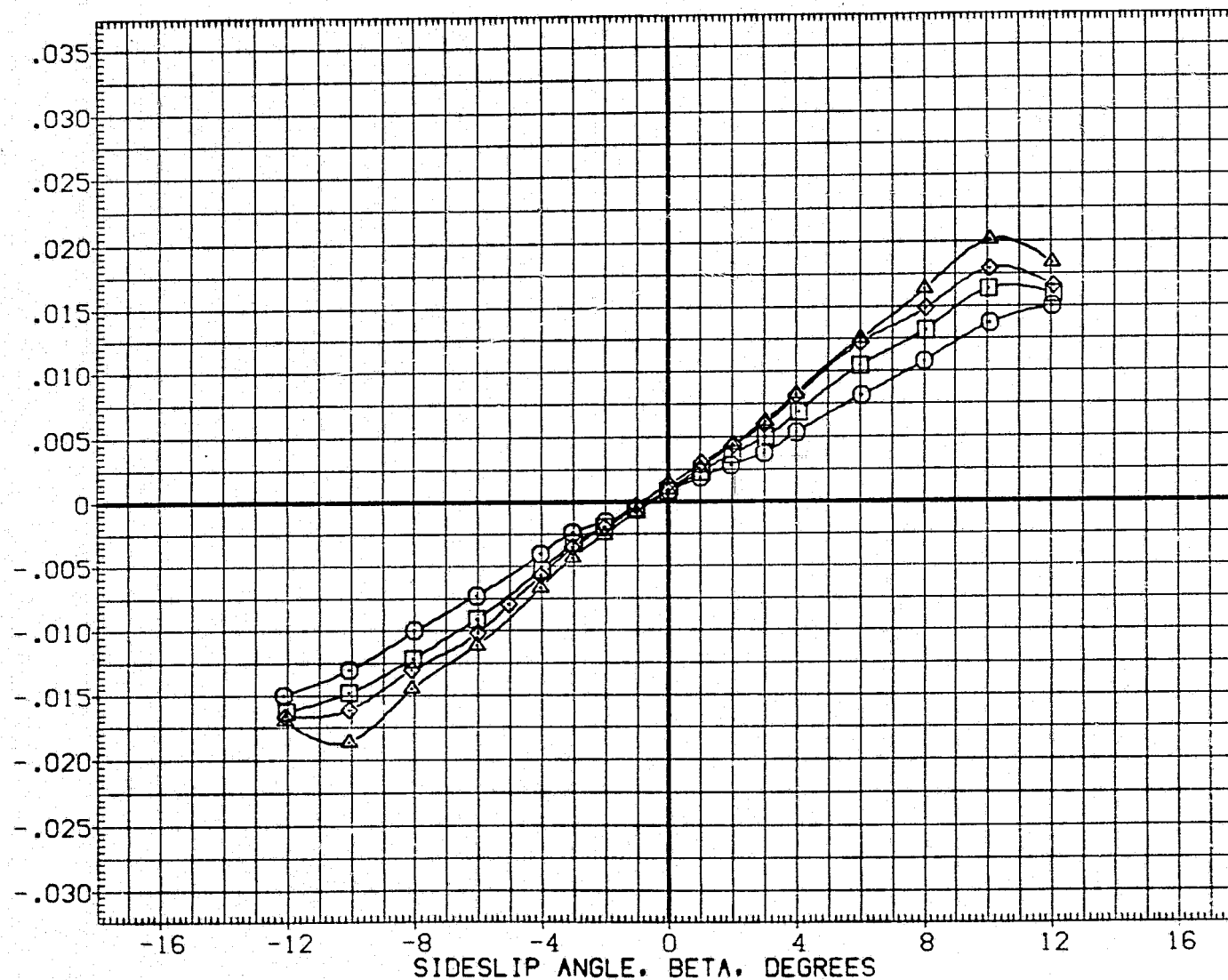


FIG.210 ORBITER ALONE, TAIL CONE OFF, ALPHA=8 DEG



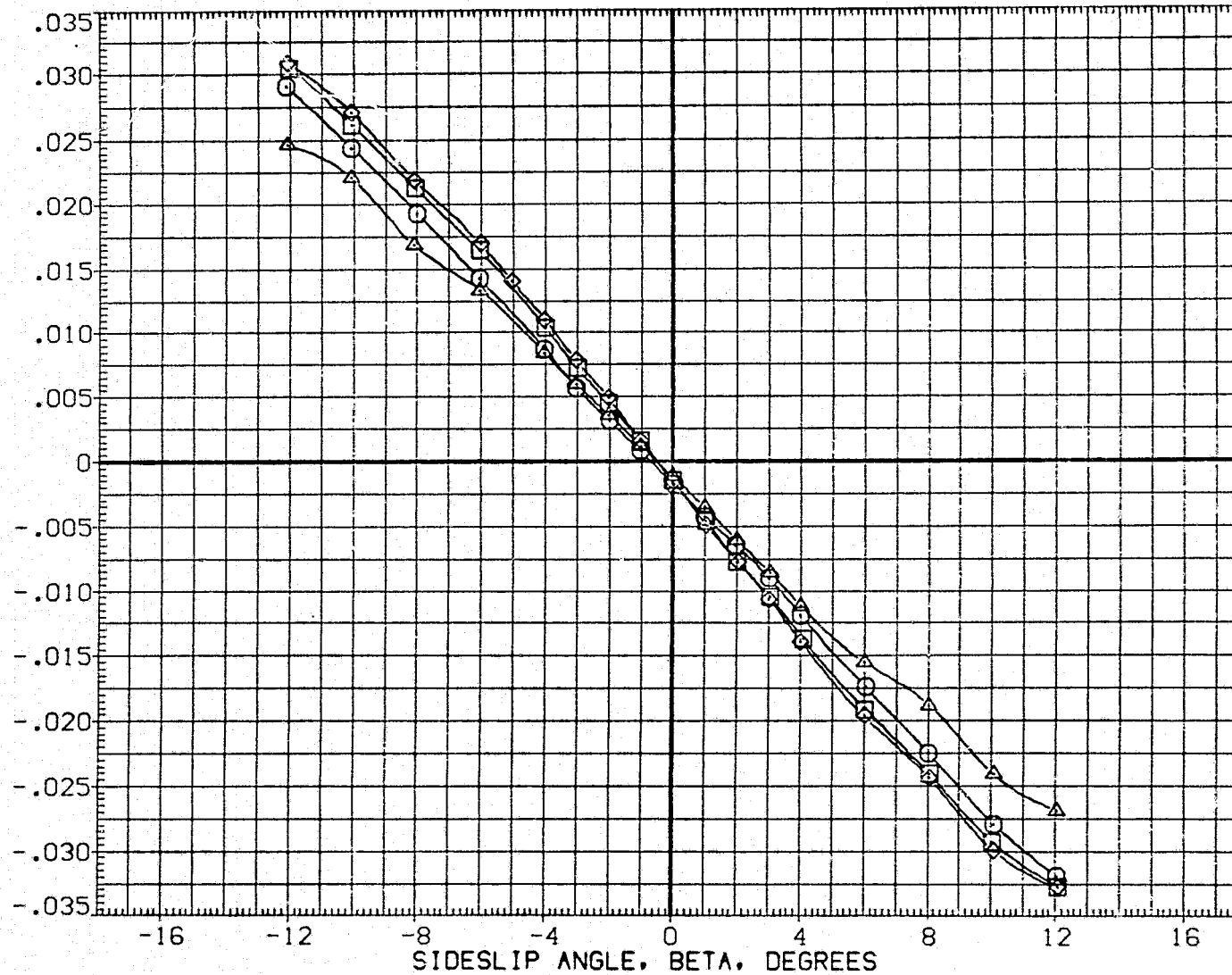
CA5 ORB N28 N24

(AGM130)

SYMBOL	MACH	ALPHA	PARAMETRIC VALUES
○	.300	8.000	
□	.500		
◇	.600		
△	.700		

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

FIG.210 ORBITER ALONE, TAIL CONE OFF,  $\alpha = 8^\circ$

SYMBOL	MACH	ALPHA1	PARAMETRIC VALUES
○	.299	15.000	
□	.500		
◇	.600		
△	.700		

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

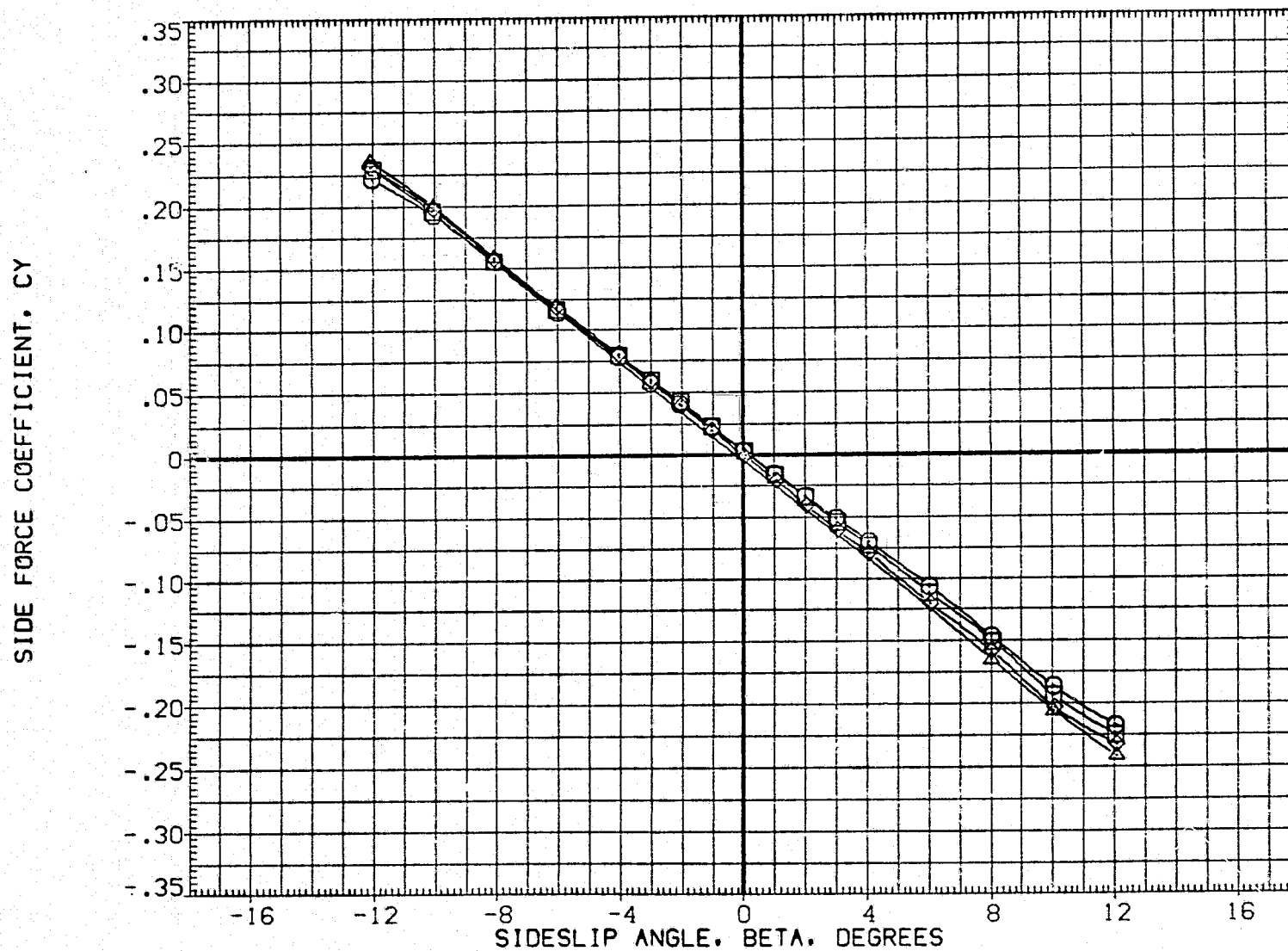


FIG.211 ORBITER ALONE, TAIL CONE OFF, ALPHA=15 DEG

CA5 ORB N28 N24

(AGM131)

SYMBOL	MACH	ALPHA	PARAMETRIC VALUES
○	.299	ALPHA1	15.000
□	.500		
◇	.600		
△	.700		

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

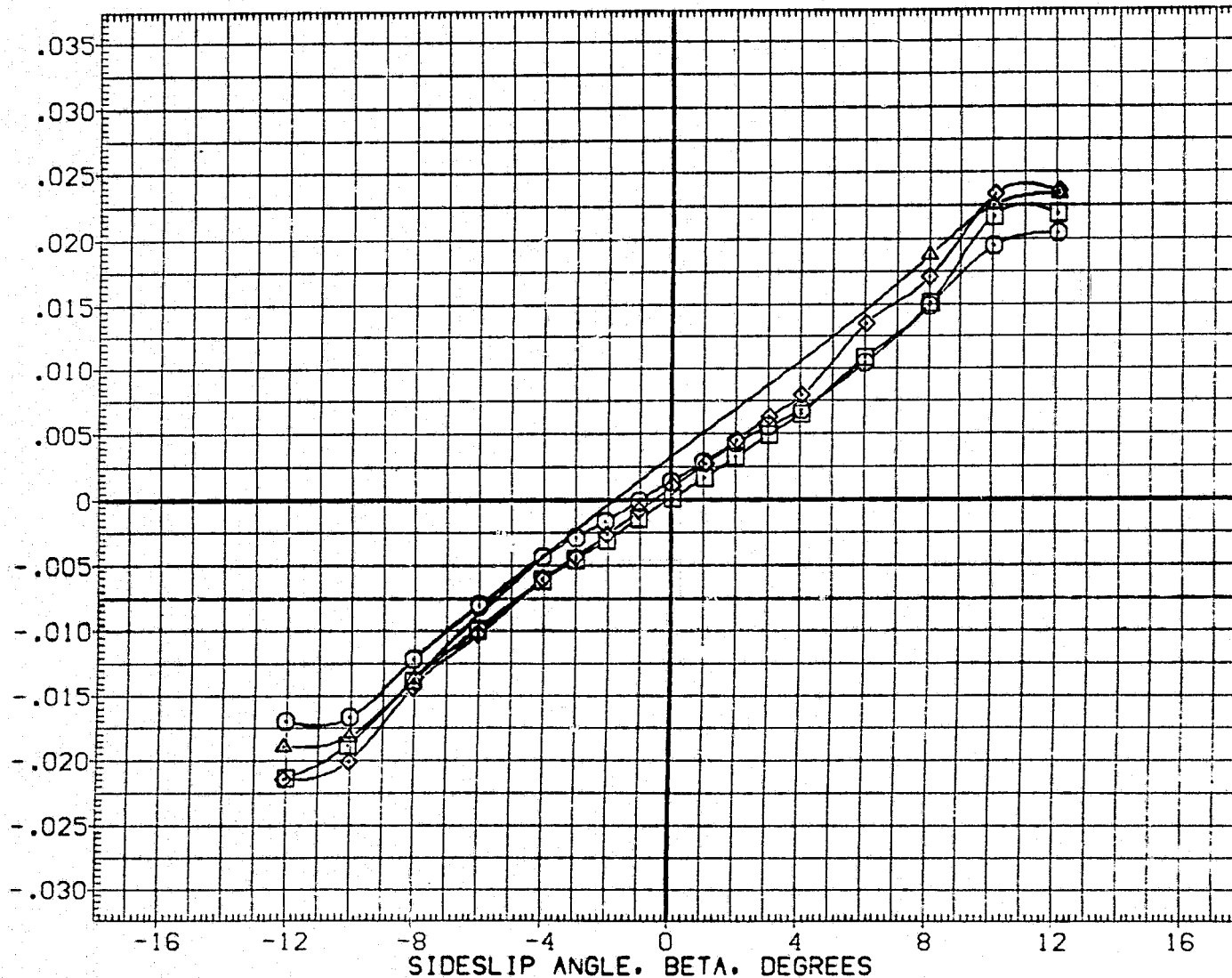


FIG.211 ORBITER ALONE, TAIL CONE OFF, ALPHA1=15 DEG

SYMBOL	MACH	PARAMETRIC VALUES
○	.299	ALPHA1 15.000
□	.500	
◇	.600	
△	.700	

## REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

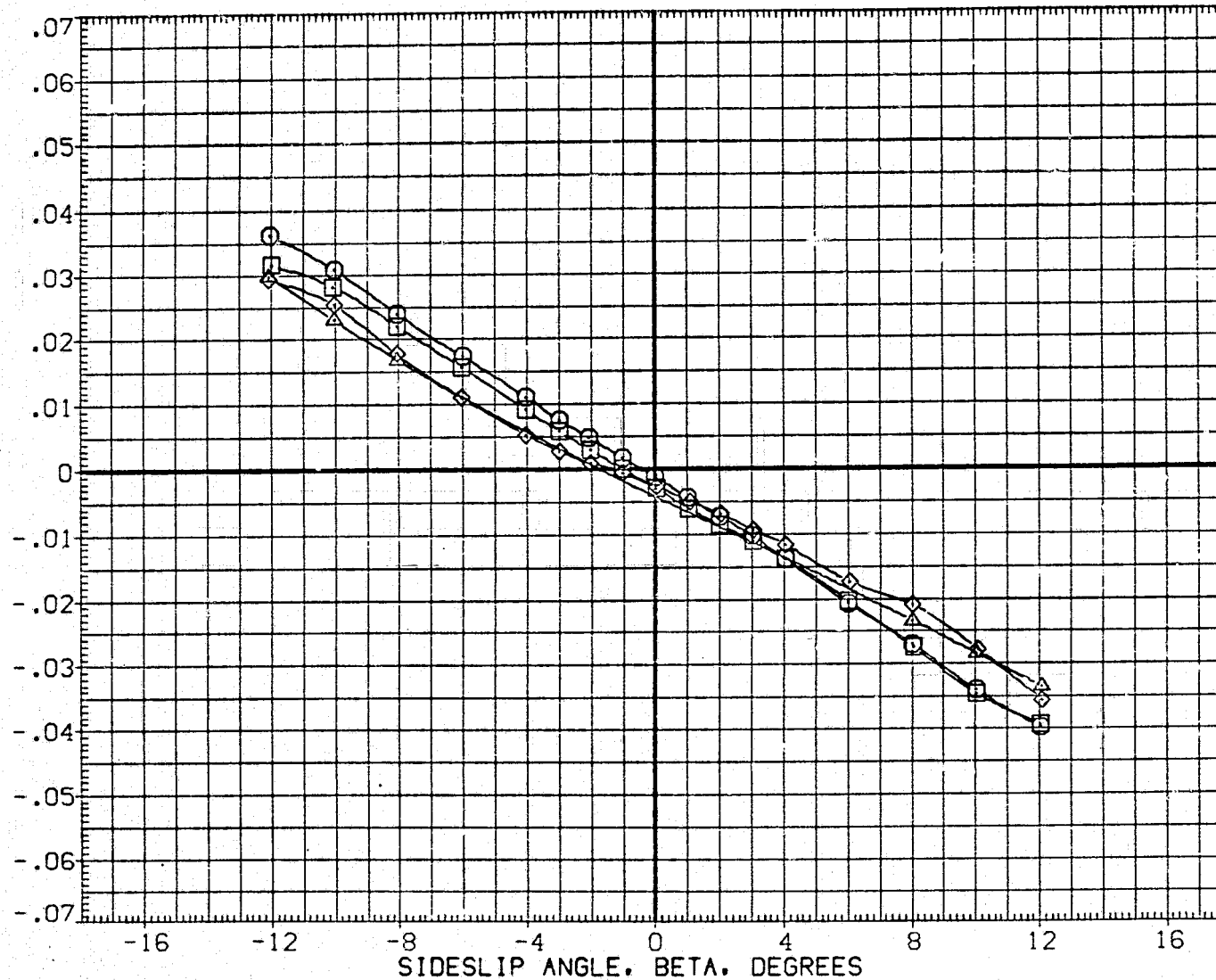


FIG.211 ORBITER ALONE, TAIL CONE OFF, ALPHA1=15 DEG

CA5 ORB TC5

(AGM133)

SYMBOL	MACH	ALPHA I	PARAMETRIC VALUES
○	.300		8.000
□	.499		
◇	.600		
△	.699		

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

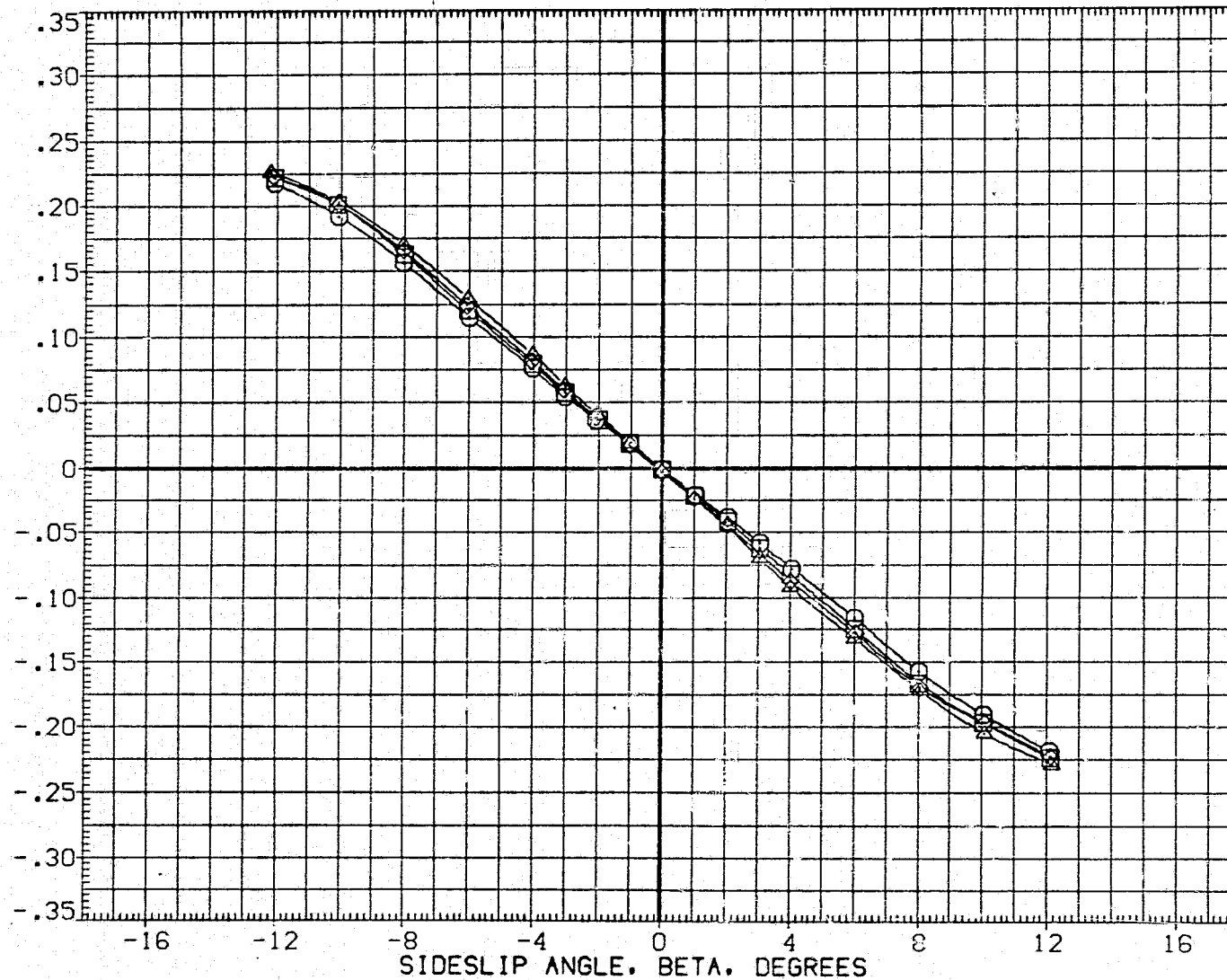


FIG.212 ORBITER ALONE, TAIL CONE ON, ALPHA I=8 DEG

SYMBOL	MACH	ALPHA	PARAMETRIC VALUES
○	.300	8.000	
□	.499		
◇	.600		
△	.699		

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

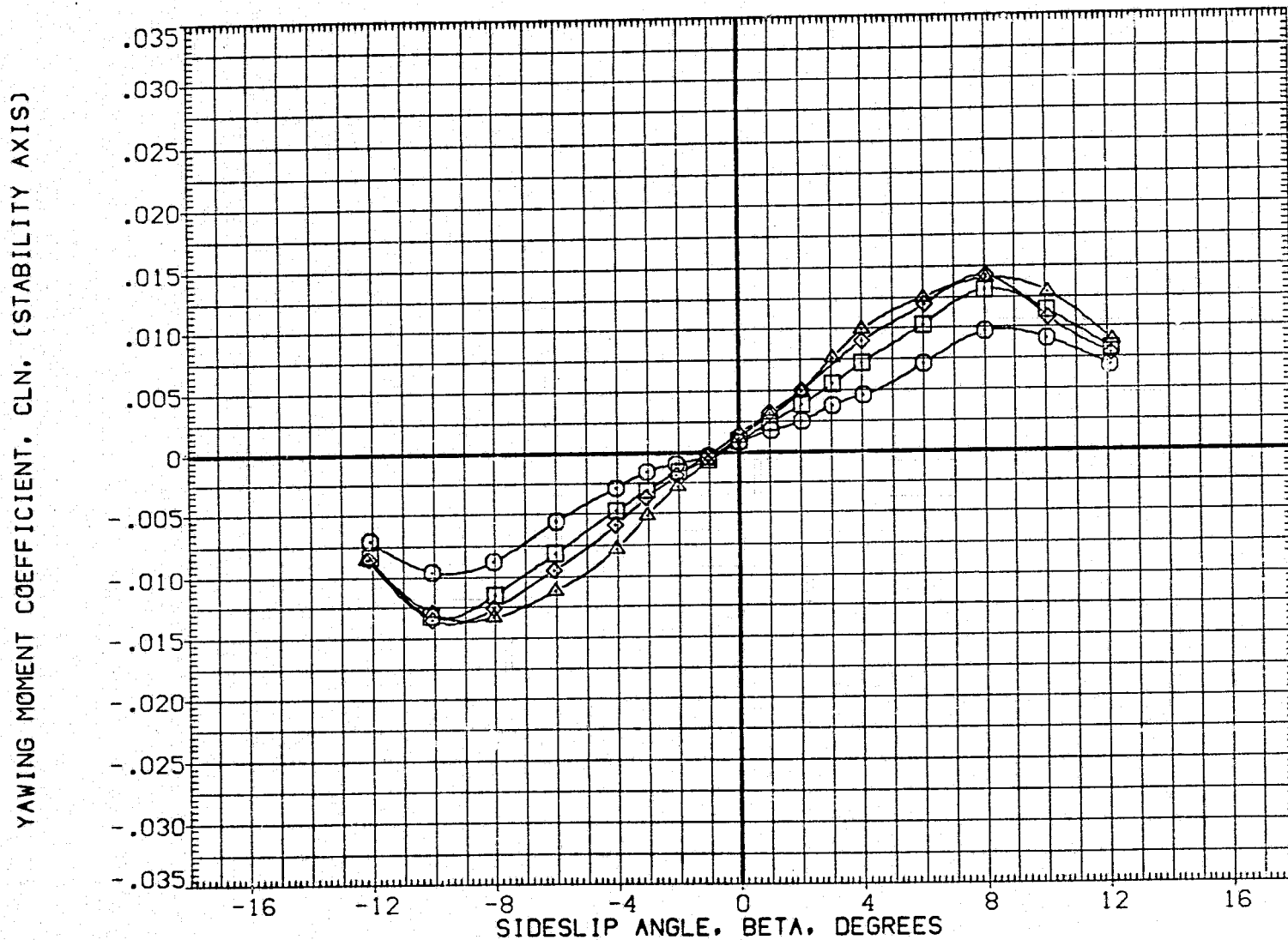


FIG.212 ORBITER ALONE, TAIL CONE ON, ALPHA=8 DEG

CA5 ORB TC5

(AGM133)

SYMBOL	MACH	ALPHA1	PARAMETRIC VALUES
○	.300	8.000	
□	.499		
◇	.600		
△	.699		

## REFERENCE INFORMATION

SREF	2690.0000	SQ. FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

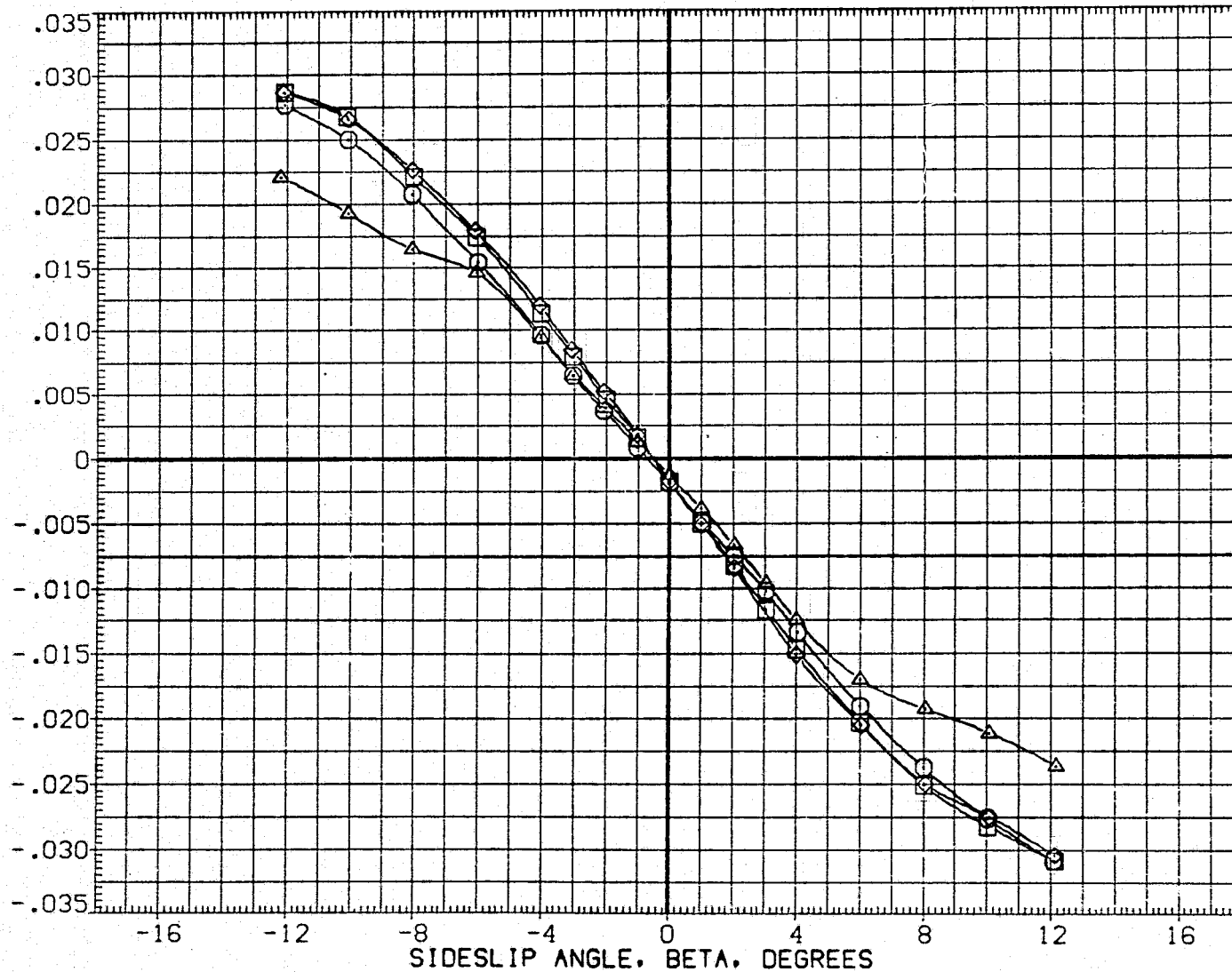


FIG.212 ORBITER ALONE, TAIL CONE ON, ALPHA1=8 DEG

SYMBOL	MACH	ALPHA1	PARAMETRIC VALUES
○	.301	15.000	
□	.499		
◇	.600		
△	.700		

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

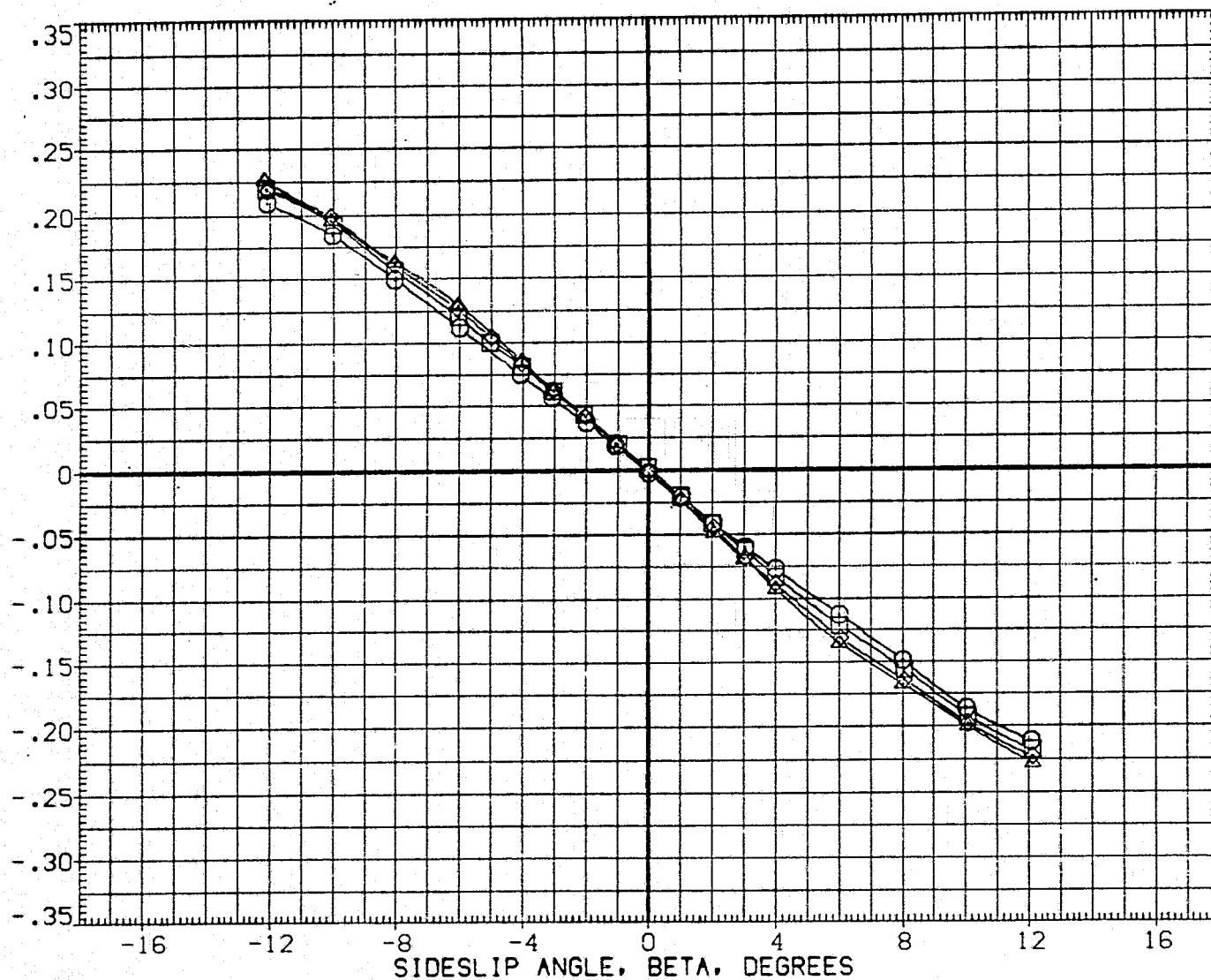


FIG.213 ORBITER ALONE, TAIL CONE ON, ALPHA1=15 DEG



CA5 ORB TC5

(AGM134)

SYMBOL	MACH	ALPHA1	PARAMETRIC VALUES
○	.301		15.000
□	.499		
◇	.600		
△	.700		

## REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

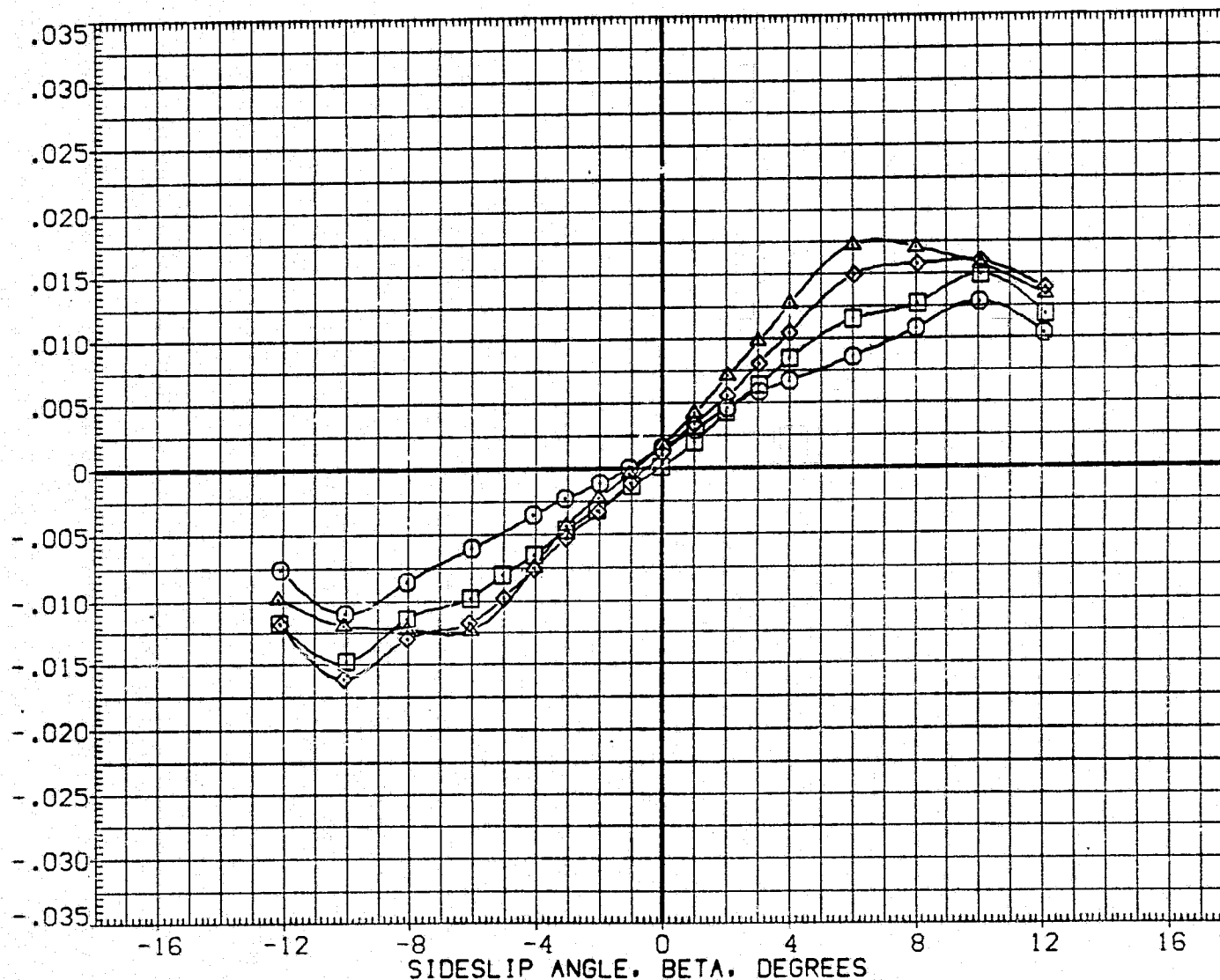


FIG.213 ORBITER ALONE, TAIL CONE ON, ALPHA1=15 DEG

SYMBOL	MACH	ALPHA	PARAMETRIC VALUES
○	.301	15.000	
□	.499		
◇	.600		
△	.700		

REFERENCE INFORMATION		
SREF	2690.0000	SG.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

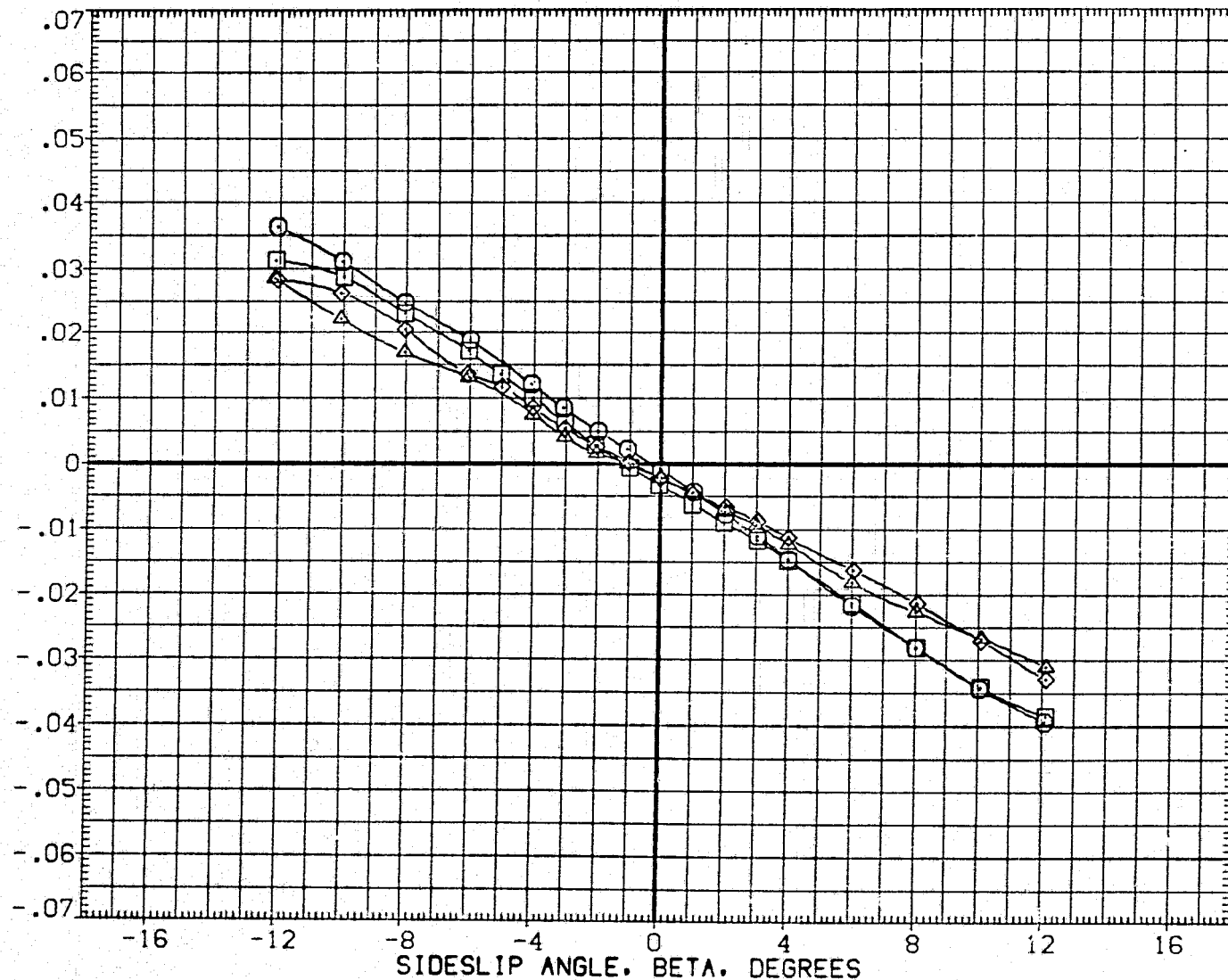


FIG.213 ORBITER ALONE, TAIL CONE ON, ALPHA=15 DEG

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMD44) ○	BTWT-1431CA5 K1 FO H15.6 V9.1
(RGMD45) □	BTWT-1431CA5 K1 FO H15.6 V9.1

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
1.000	.000	.000	.000	SREF 5500.0000	50.FT.
1.000	.000	45.000	20.000	LREF 327.8000	IN.
				BREF 2348.0000	IN.
				XMRP 1339.9100	IN. XC
				YMRP .0000	IN. YC
				ZMRP 190.7500	IN. ZC
				SCALE .0300	

LIFT COEFFICIENT, CL

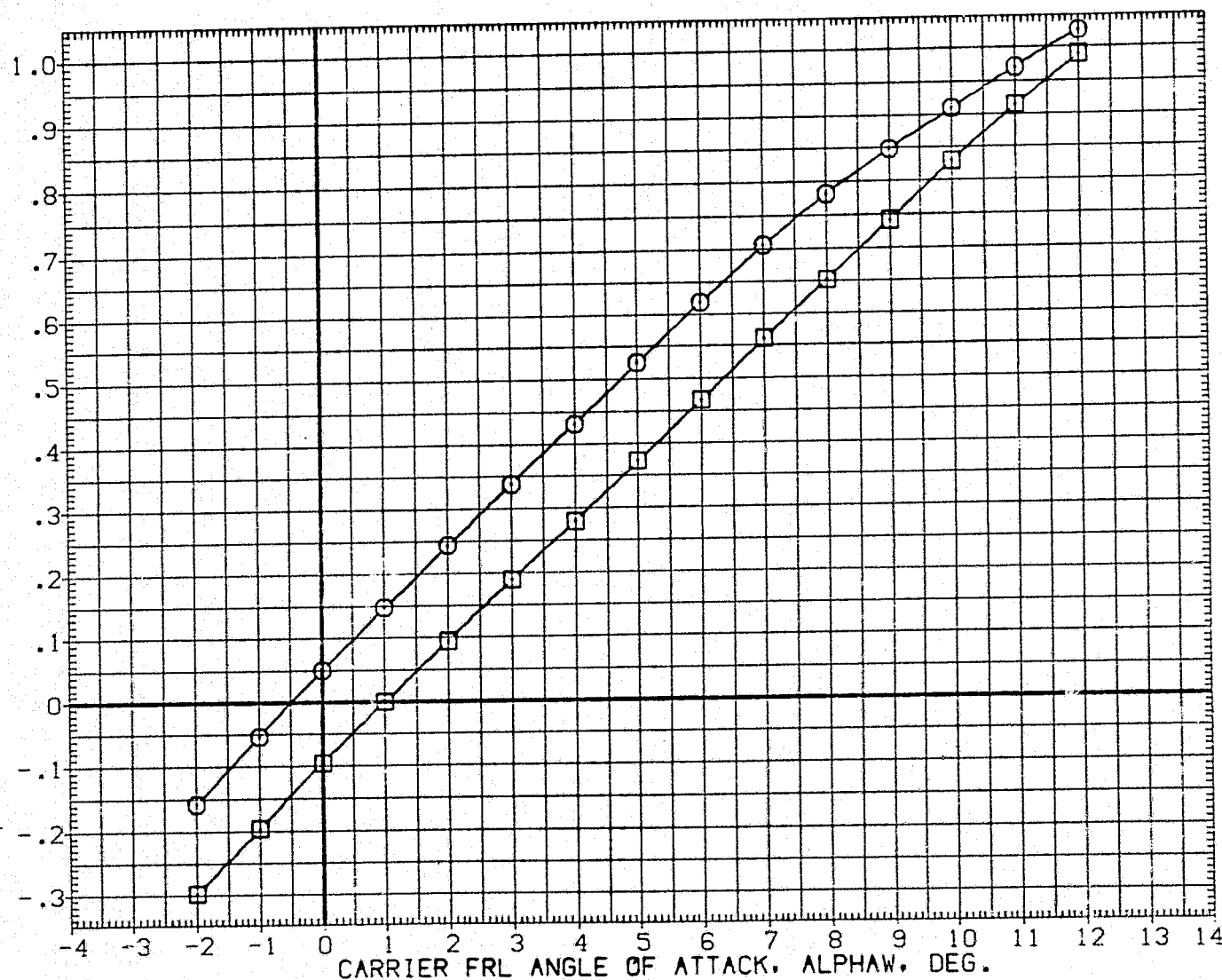


FIG.214 747 ALONE, EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD44) BTWT-1431CA5 K1 FO H15.6 V9.1  
 (RGMD45) BTWT-1431CA5 K1 FO H15.6 V9.1

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
1.000	.000	45.000	20.000	LREF	327.8000	IN.
				BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

LIFT COEFFICIENT, CL

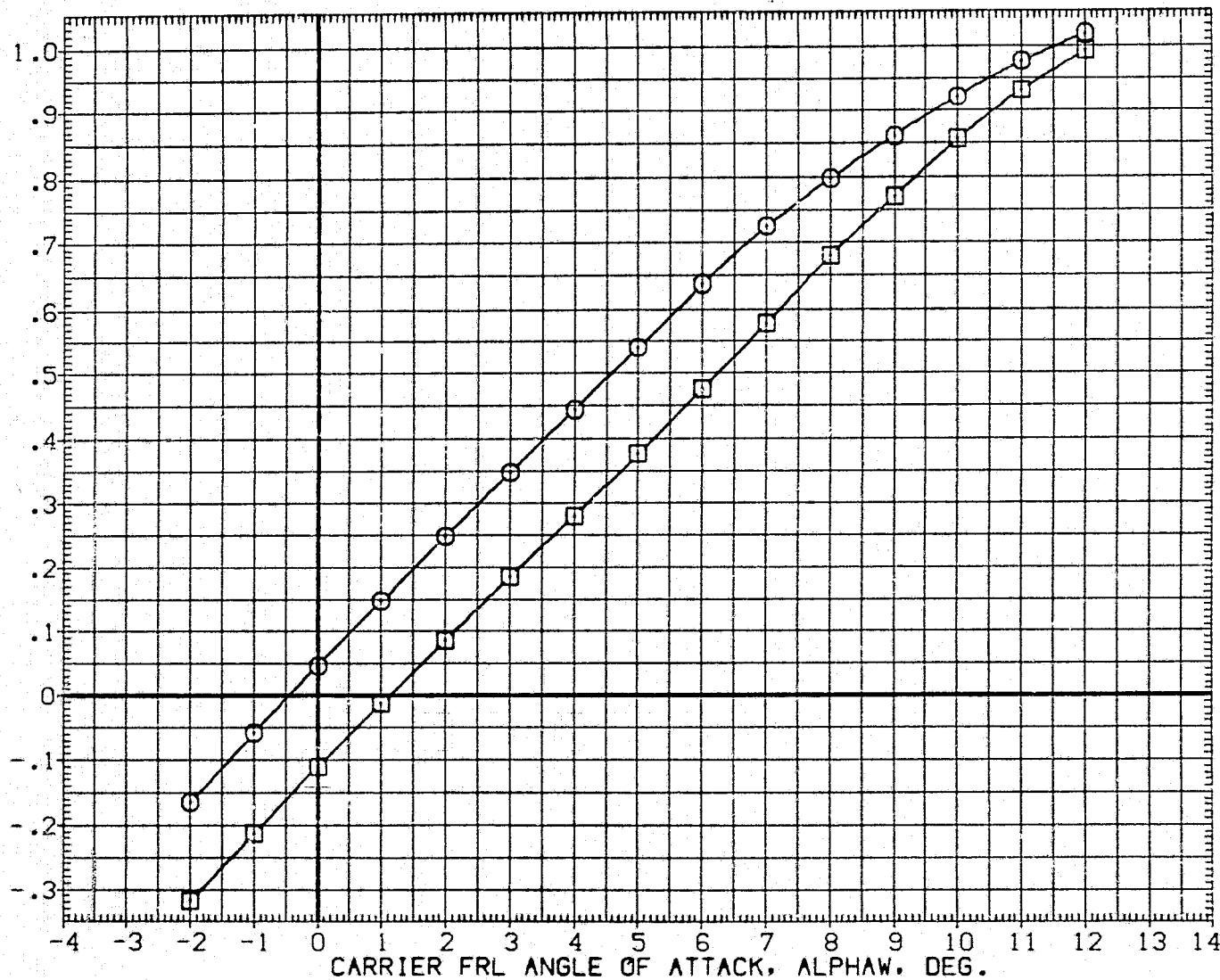


FIG.214 747 ALONE, EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM044) ○	BTWT-1431CA5 KI FO H15.6 V9.1
(RGM045) □	BTWT-1431CA5 KI FO H15.6 V9.1

STAB	S1-2	S3-4	S5-6
1.000	.000	.000	.000
1.000	.000	45.000	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

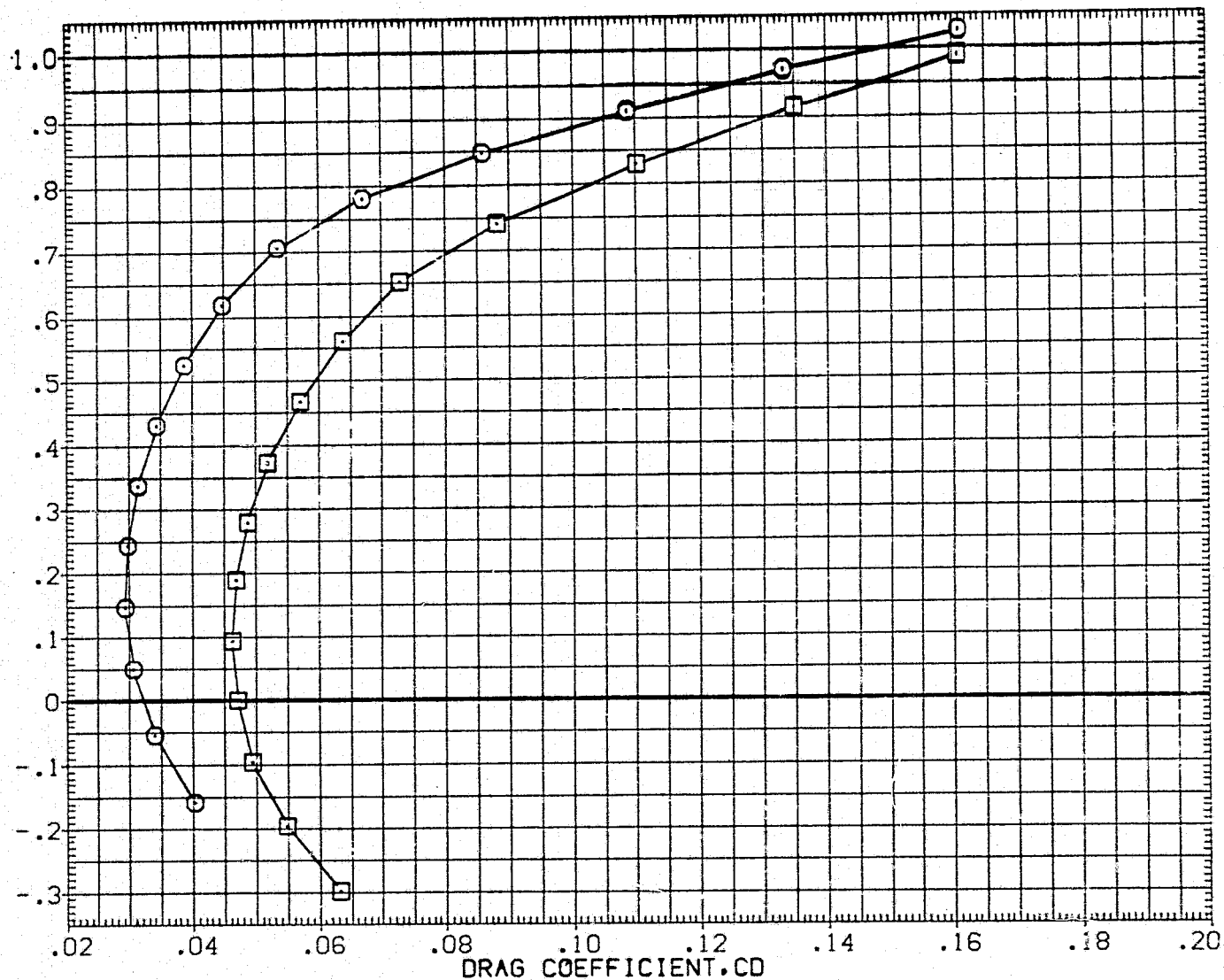


FIG.214 747 ALONE,EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP  
(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM044) ○ BTWT-1431CA5 K1 FO H15.6 V9.1  
 (RGM045) □ BTWT-1431CA5 K1 FO H15.6 V9.1

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
1.000	.000	.000	.000	SREF	5500.0000 SQ.FT.
1.000	.000	45.000	20.000	LREF	327.8000 IN.
				BREF	2348.0000 IN.
				XMRP	1339.9100 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

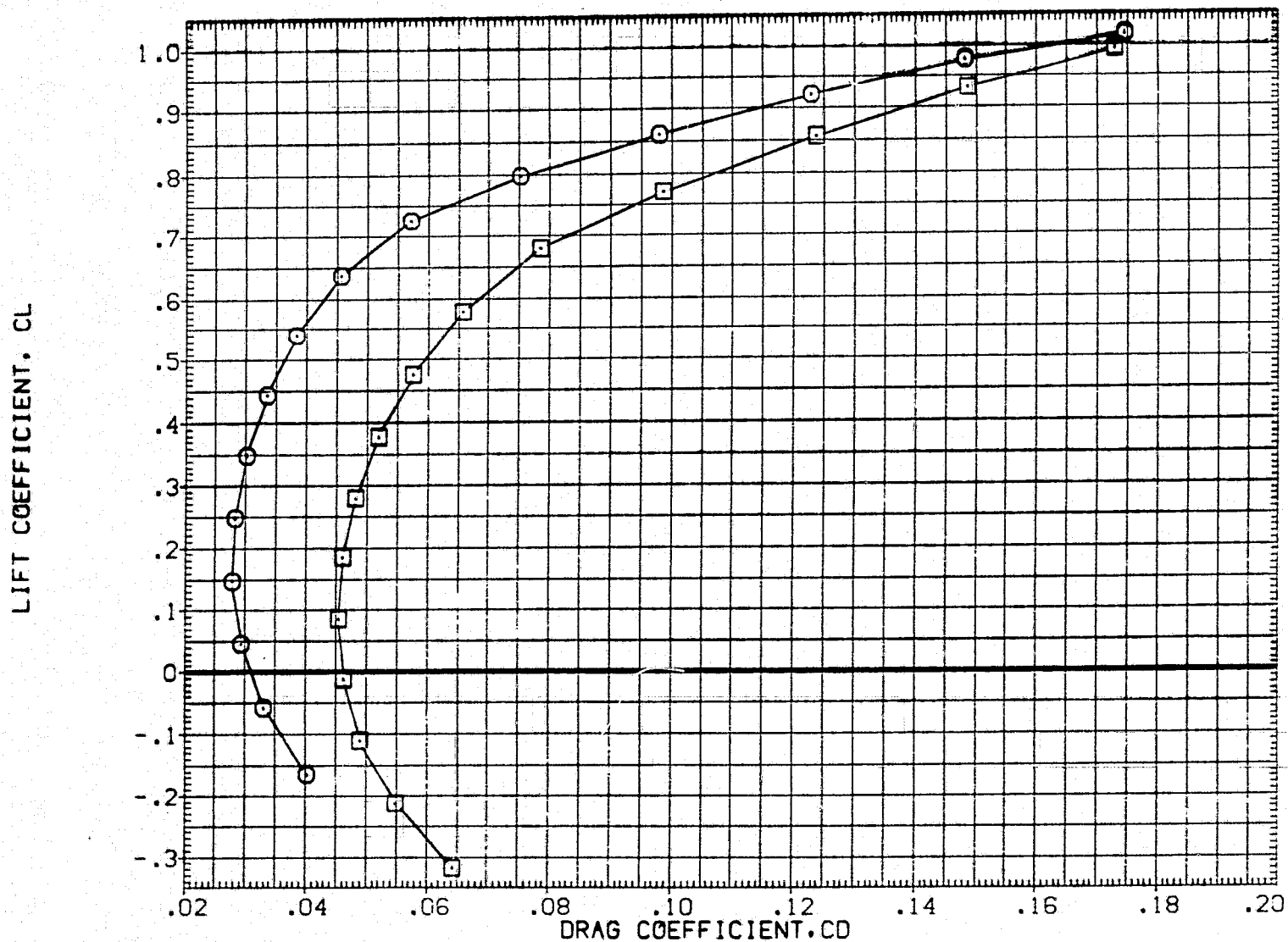


FIG.214 747 ALONE, EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP  
 (B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM044)	BTWT-1431CA5 KI FO H15.6 V9.1
(RGM045)	BTWT-1431CA5 KI FO H15.6 V9.1

STAB	S1-2	S3-4	S5-6
1.000	.000	.000	.000
1.000	.000	45.000	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

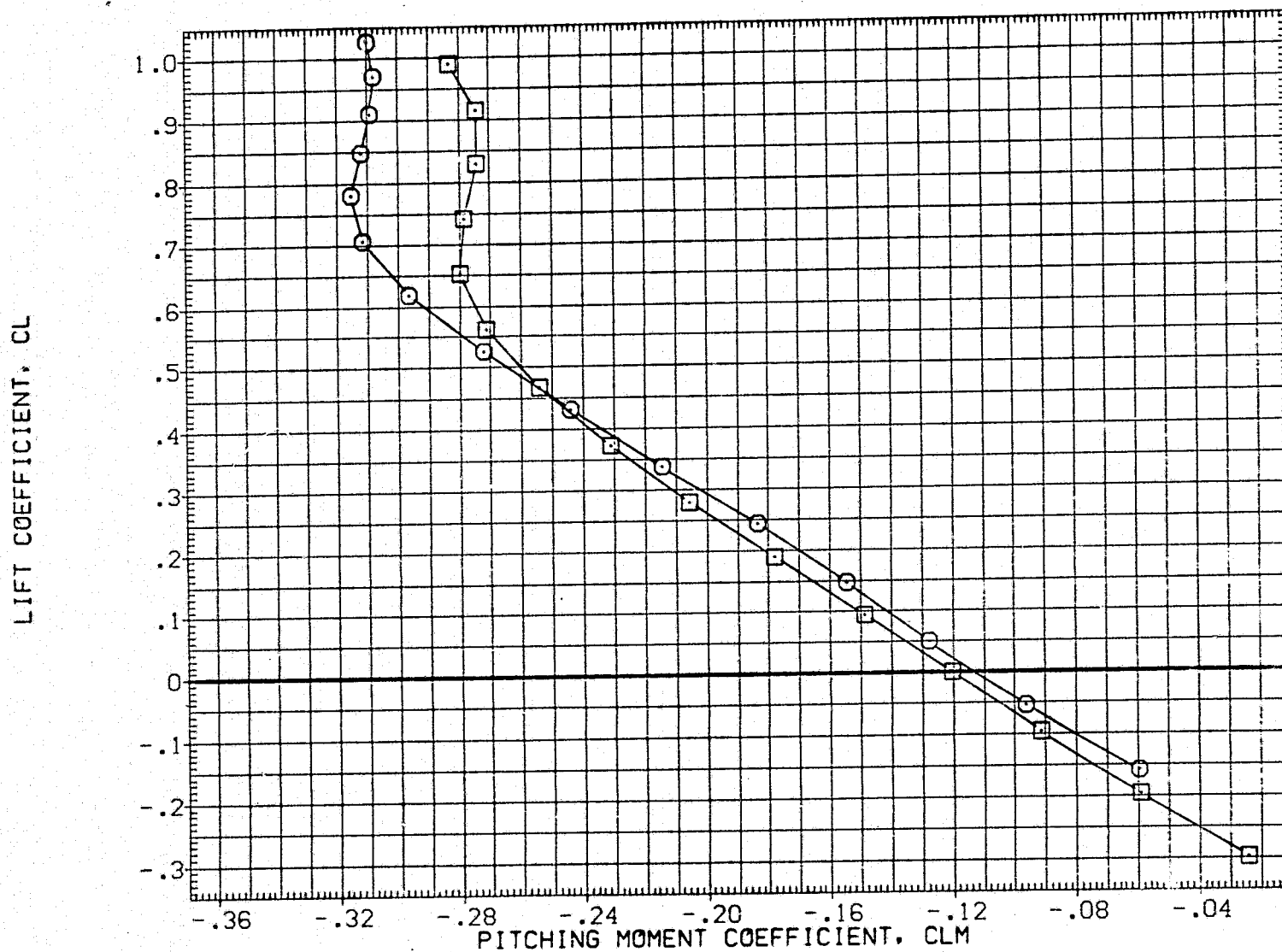


FIG.214 747 ALONE, EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMD44)	BTWT-1431CAS KI FO H15.6 V9.1
(RGMD45)	BTWT-1431CAS KI FO H15.6 V9.1

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
1.000	.000	45.000	20.000	LREF	327.8000	IN.
				BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

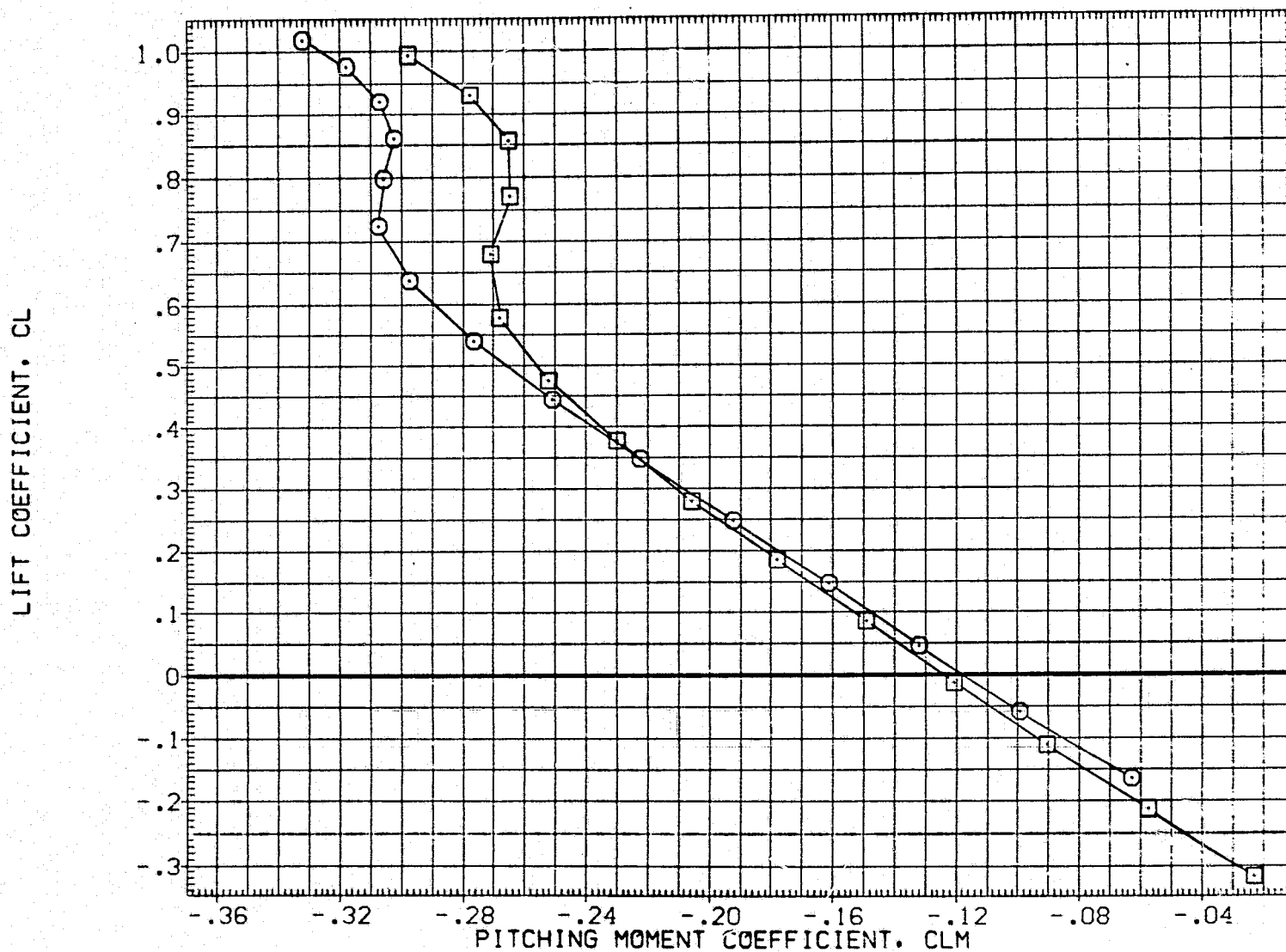


FIG.214 747 ALONE, EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP  
(B)MACH = .60



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMO44) ○	BTWT-1431CA5 K1 FO H15.6 V9.1
(RGMO45) □	BTWT-1431CA5 K1 FO H15.6 V9.1

STAB	S1-2	S3-4	S5-6
1.000	.000	.000	.000
1.000	.000	45.000	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA<sub>AW</sub>, DEG.

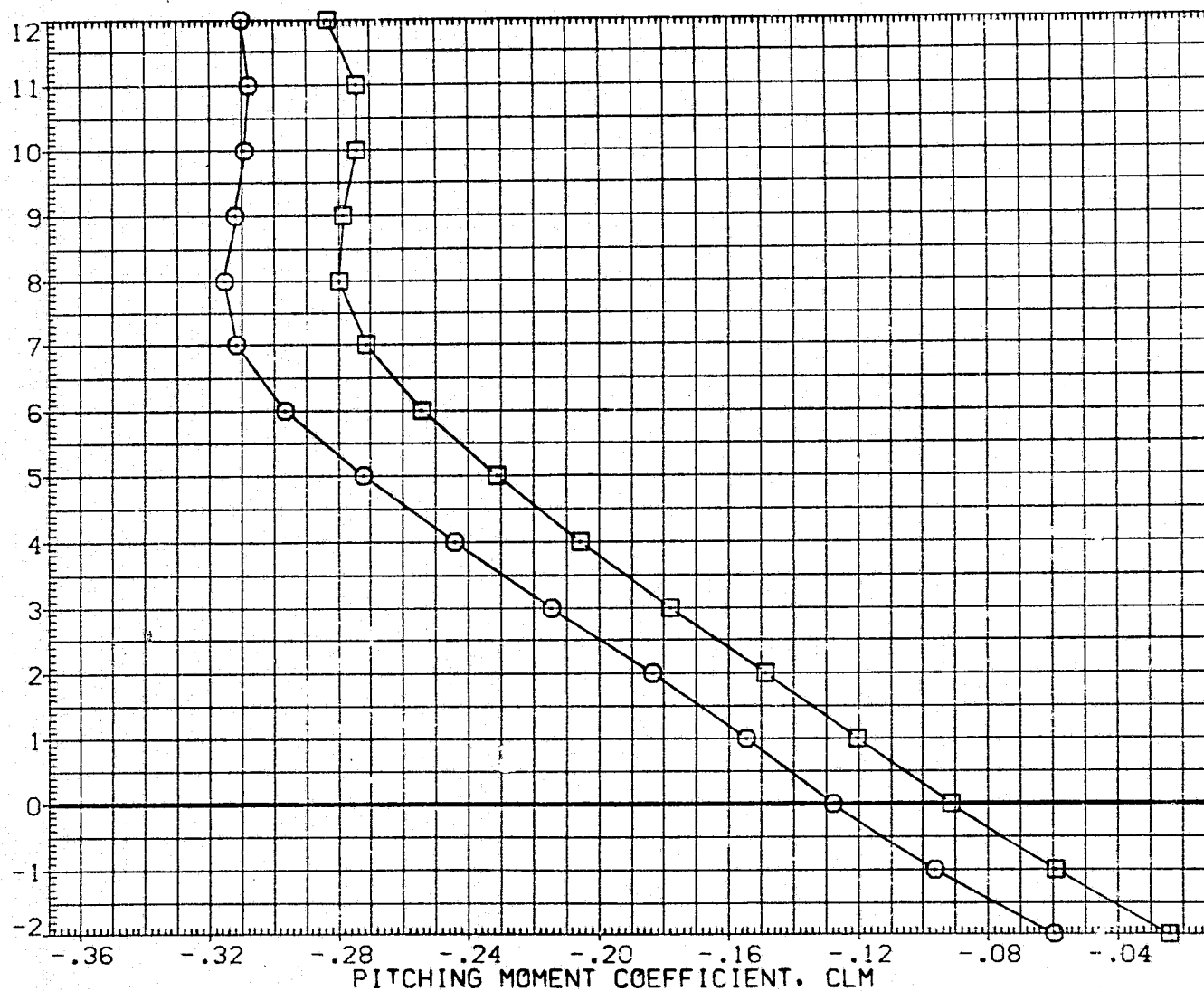


FIG.214 747 ALONE, EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(A) MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD44)  $\square$  BTWT-1431CA5 KI FO H15.6 V9.1  
 (RGMD45)  $\square$  BTWT-1431CA5 KI FO H15.6 V9.1

STAB S1-2 S3-4 S5-6  
 1.000 .000 .000 .000  
 1.000 .000 45.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK. ALPHA. DEG.

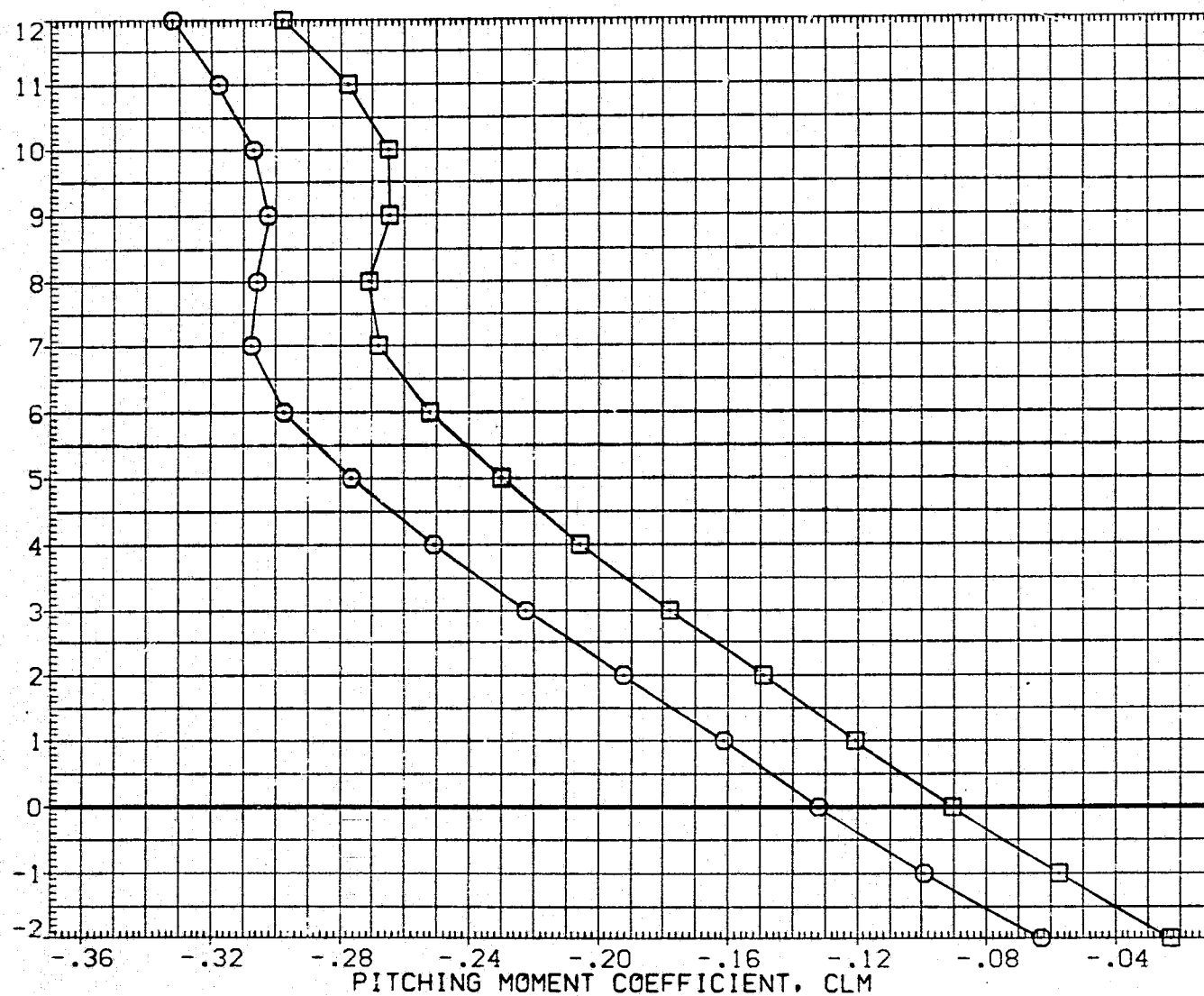


FIG.214 747 ALONE, EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(B) MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM090)  $\bigcirc$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

S1-2

S3-4

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT,  $C_L$

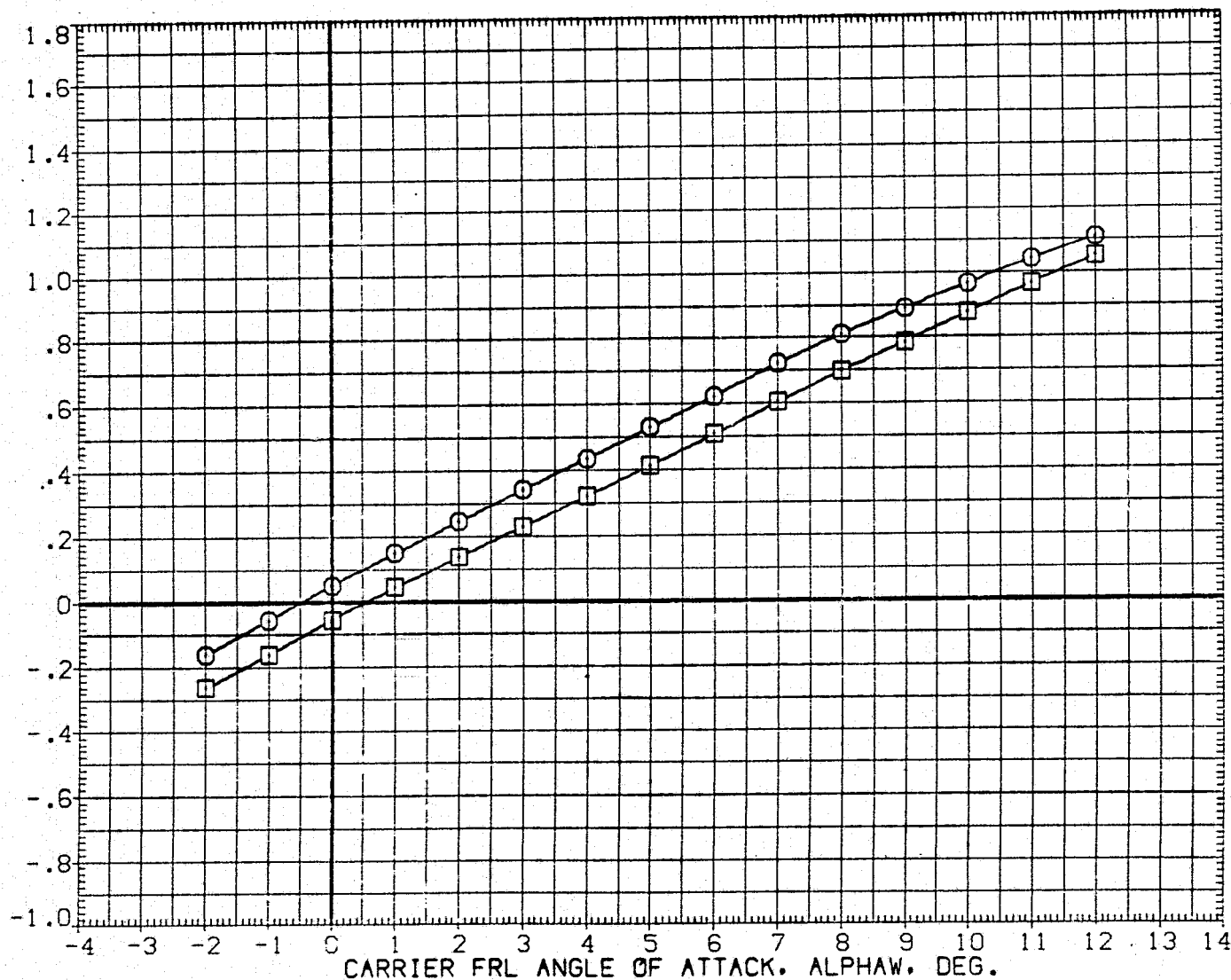


FIG.215 747+ORB(8 DEG),EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM090)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

S1-2

S3-4

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

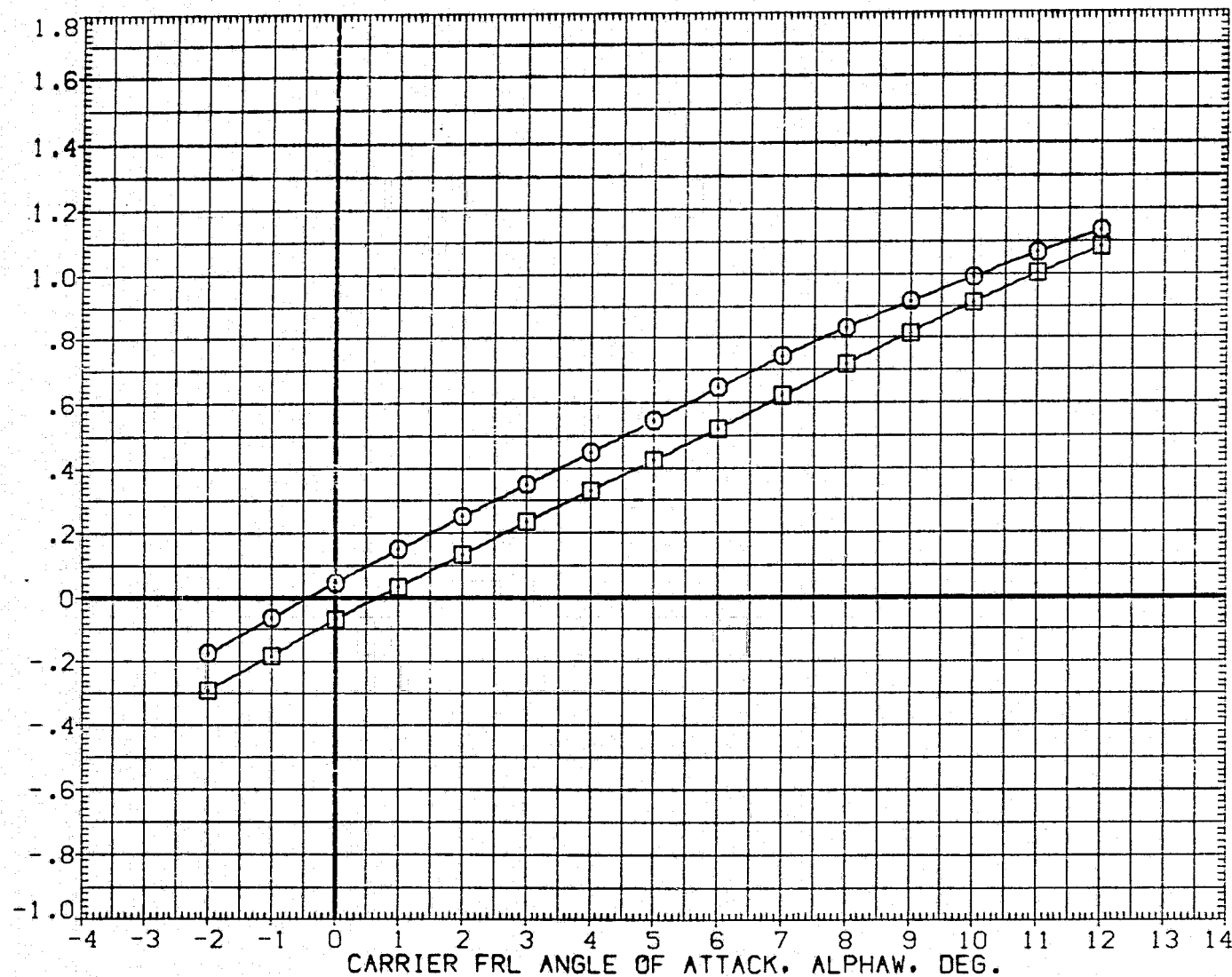


FIG.215 747+ORB(8 DEG),EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(B)MACH = .50

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(RGM090)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	.000	.000	.000	SREF	5500.0000	SG.FT.
(RGM081)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	.000	45.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

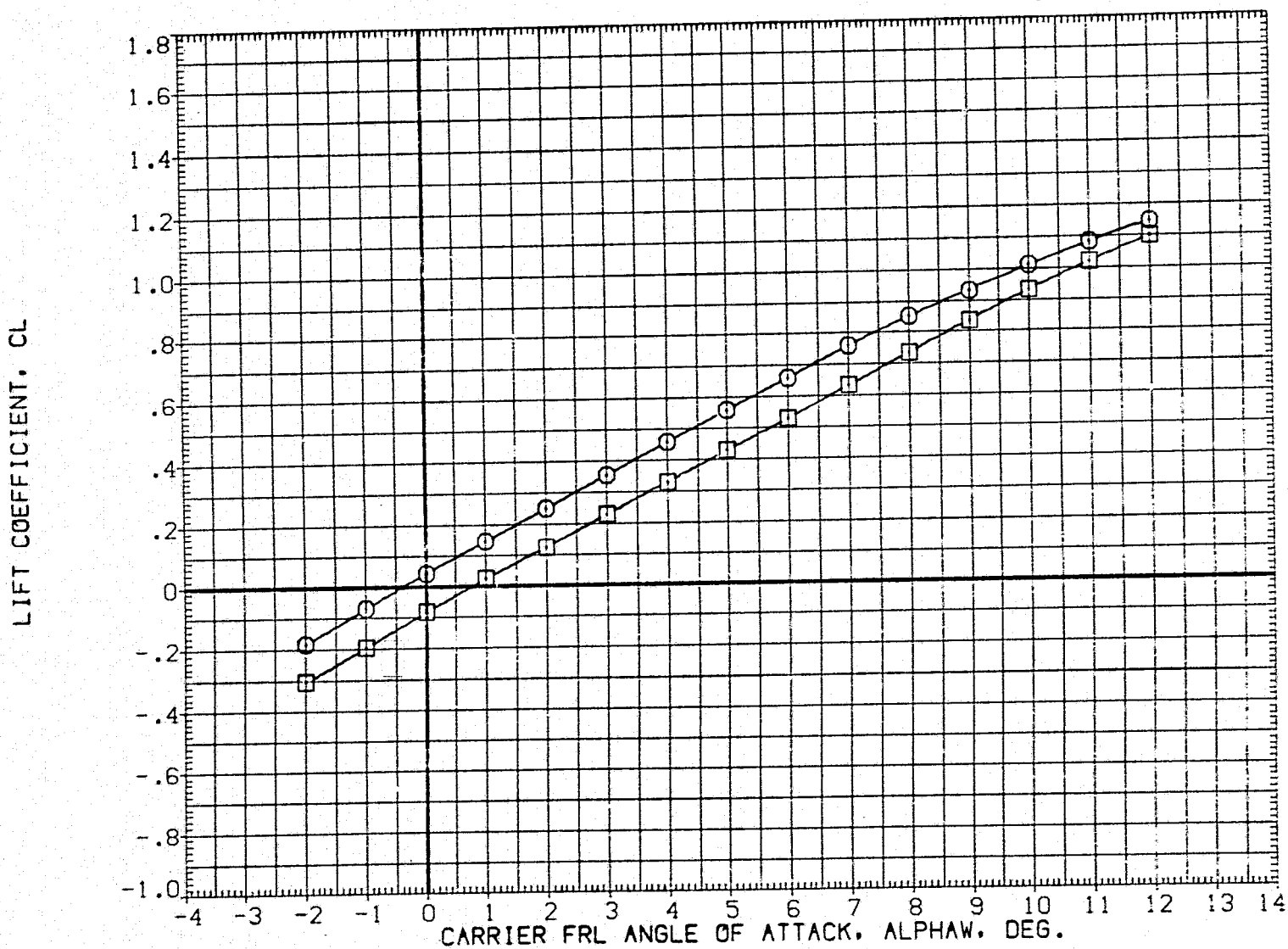


FIG.215 747+ORB(8 DEG),EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP  
(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM090) ☐ CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM081) ☐ CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

S1-2

S3-4

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

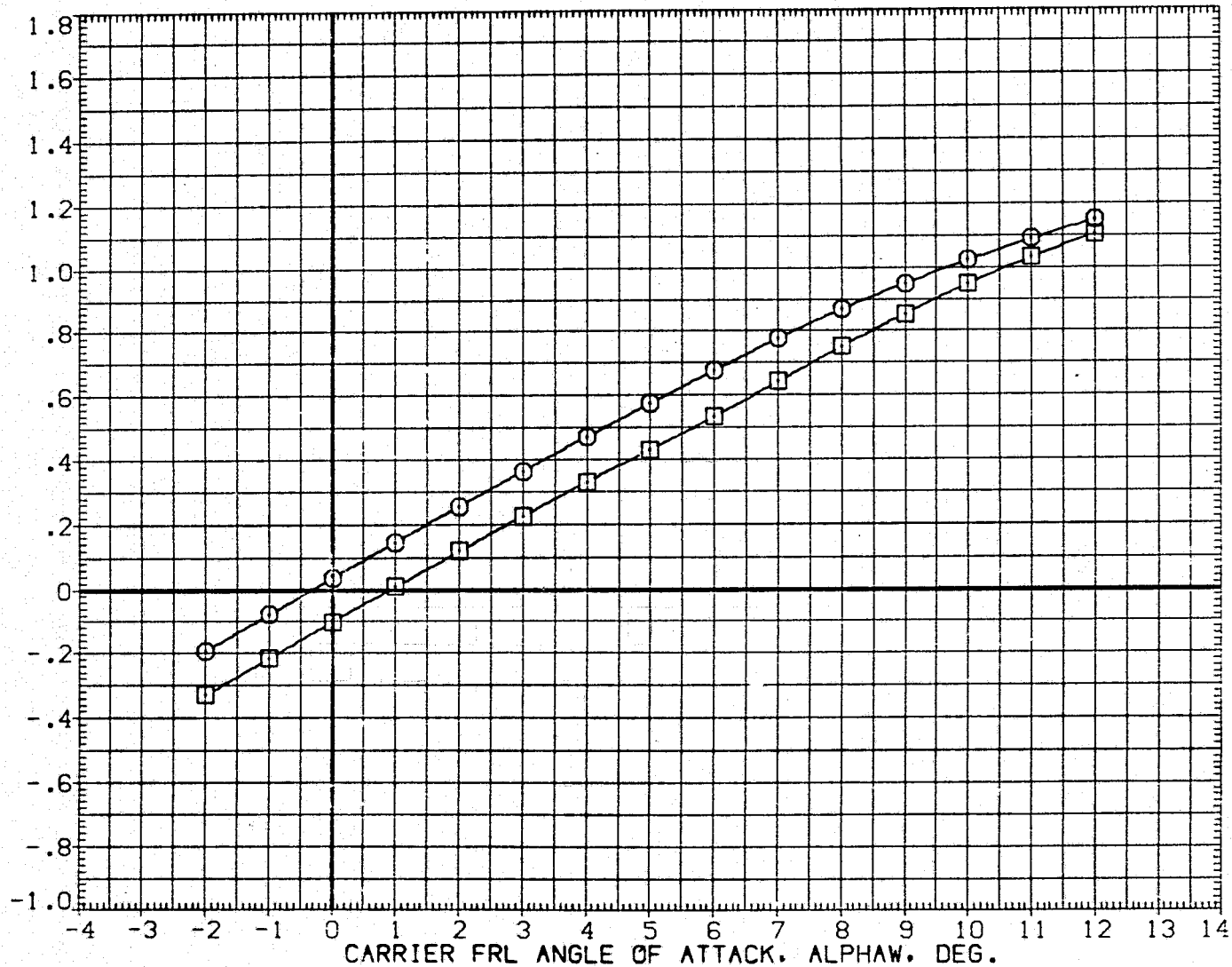


FIG.215 747+ORB(8 DEG).EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM090)  $\square$  CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM081)  $\square$  CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

S1-2

S3-4

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

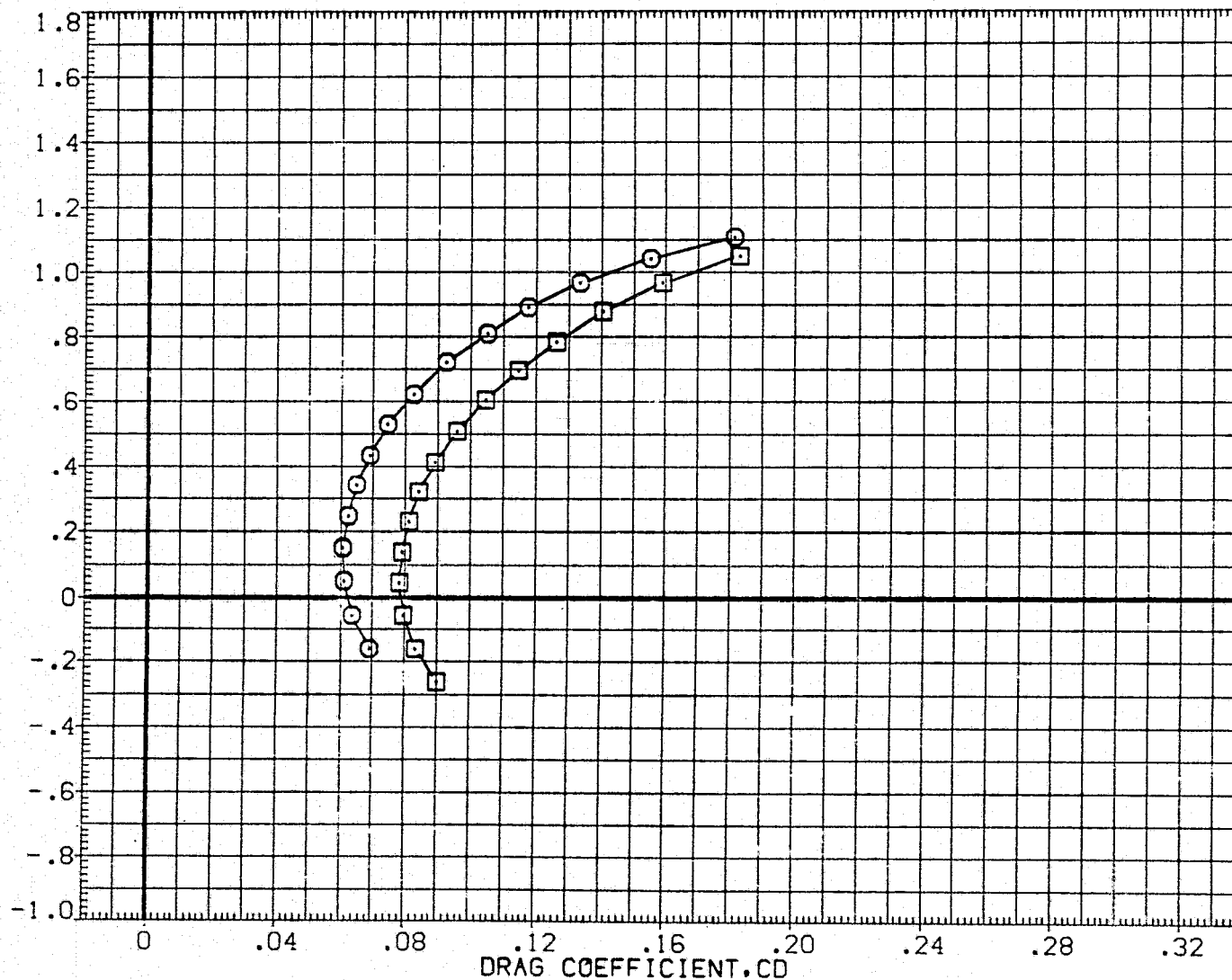


FIG.215 747+ORB(8 DEG),EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
(RGM090)	CA5 K1 FD H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	.000	.000	.000	SREF	5500.0000 SQ.FT.
(RGM081)	CA5 K1 FD H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	.000	45.000	20.000	LREF	327.8000 IN.
						BREF	2348.0000 IN.
						XMRF	1339.9100 IN. XC
						YMRF	.0000 IN. YC
						ZMRF	190.7500 IN. ZC
						SCALE	.0300

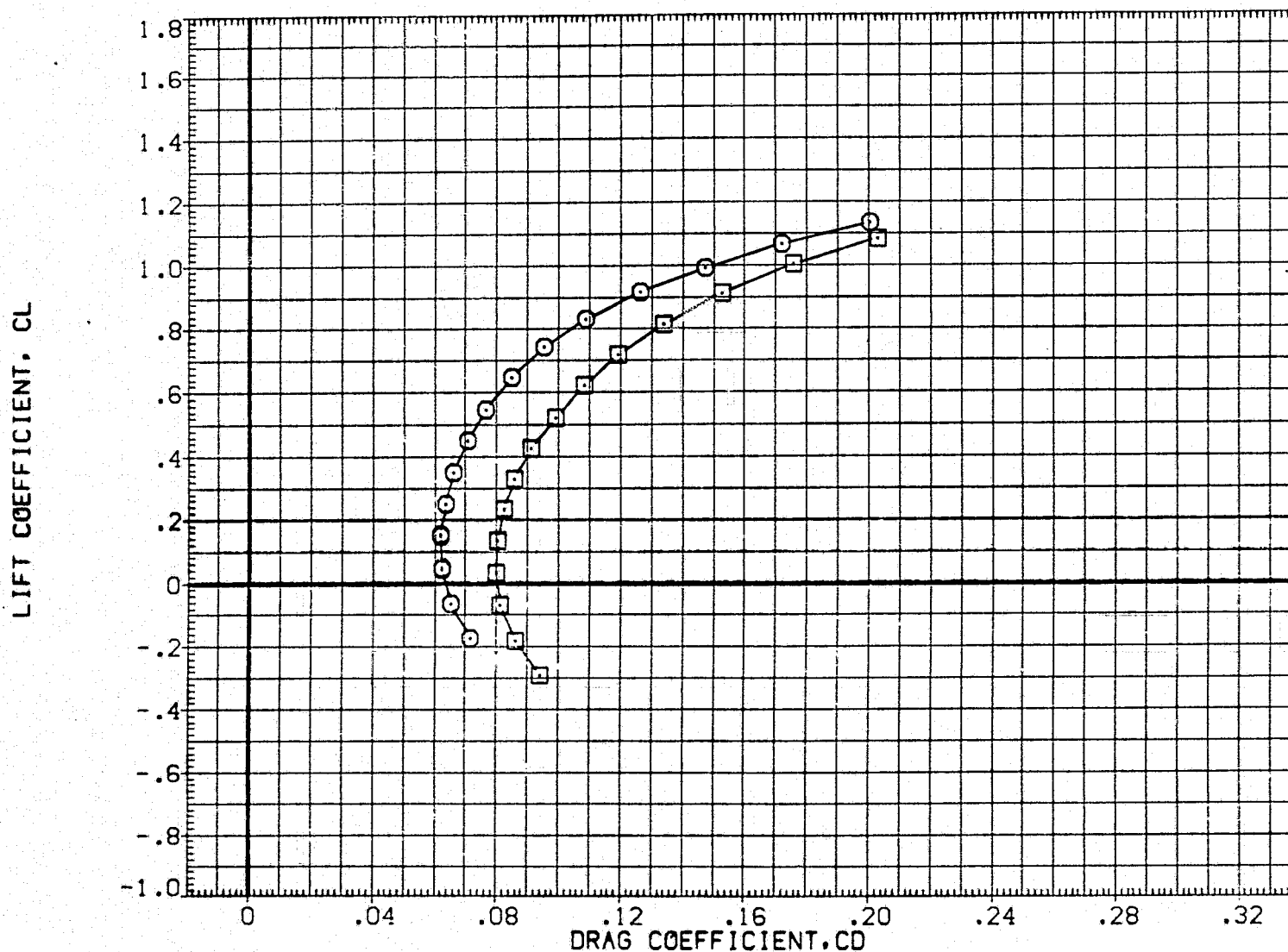


FIG.215 747+ORB(8 DEG),EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP  
(B)MACH = .50



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM090) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM081) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

S1-2

S3-4

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

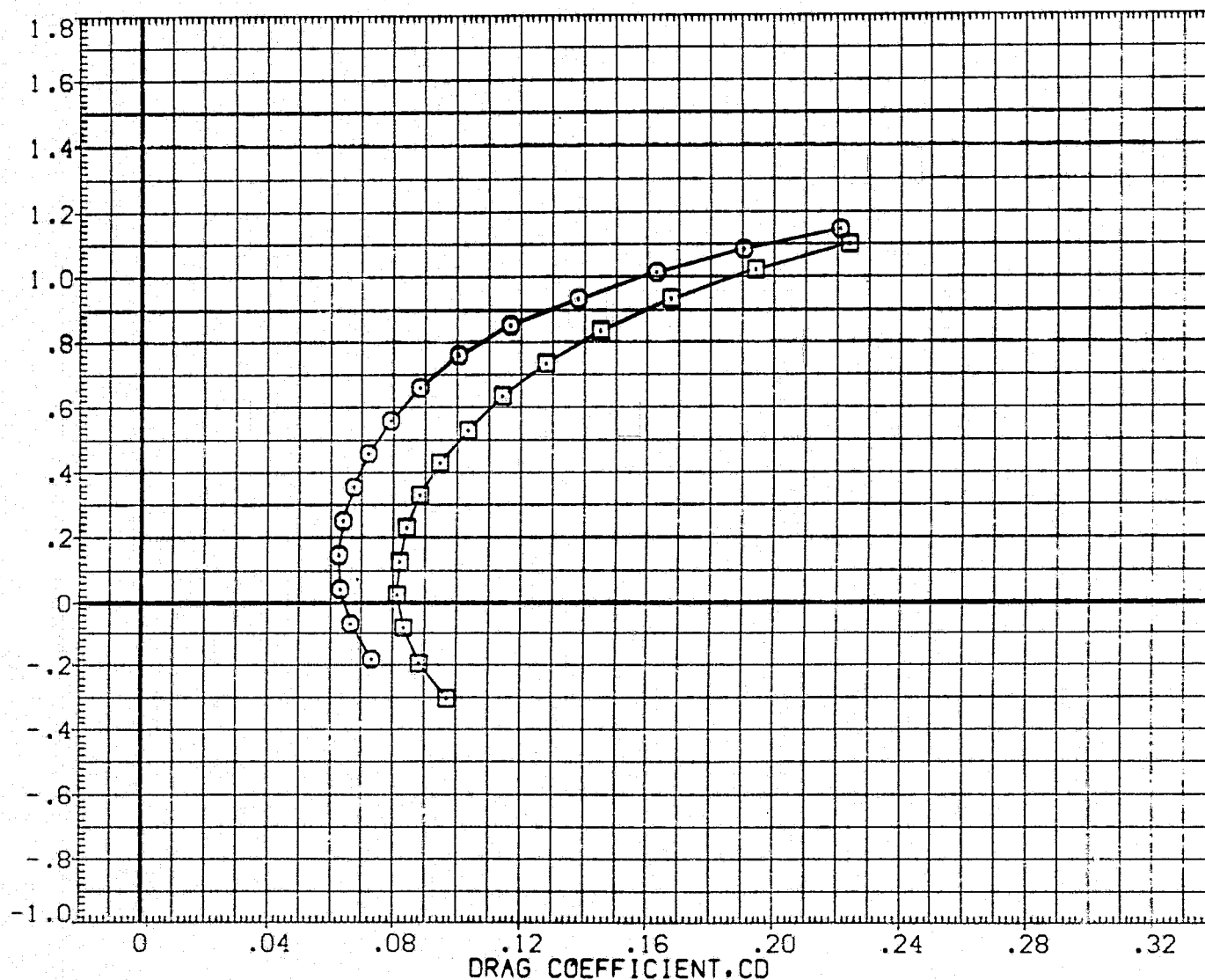


FIG.215 747+ORB(8 DEG),EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(R3M090)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
(R3M081)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	.000	45.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

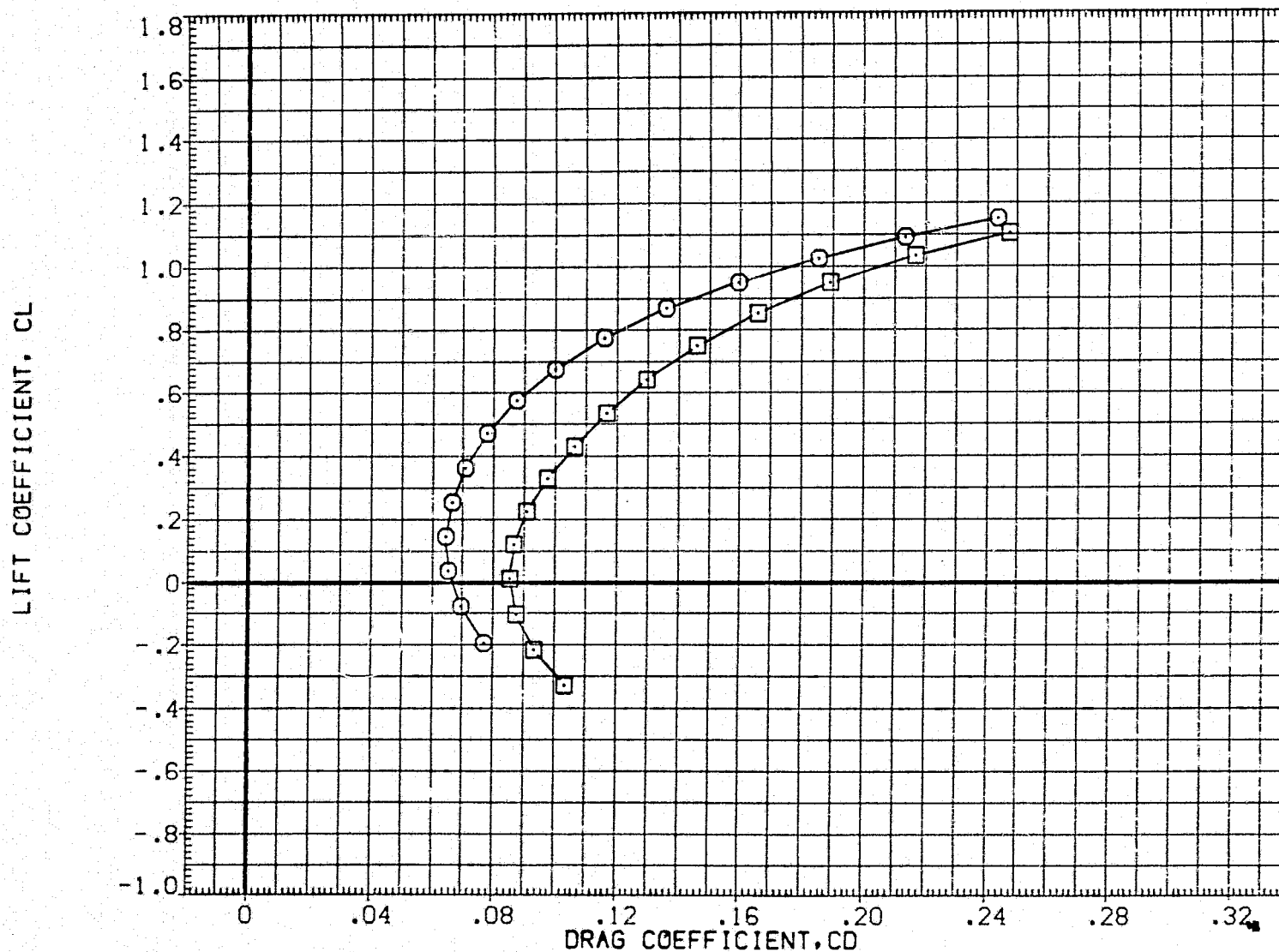


FIG.215 747+ORB(8 DEG),EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM090)  $\bigcirc$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )  
 (RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

STAB  
 1.000  
 1.000

S1-2  
 .000  
 .000

S3-4  
 .000  
 45.000

S5-6  
 .000  
 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

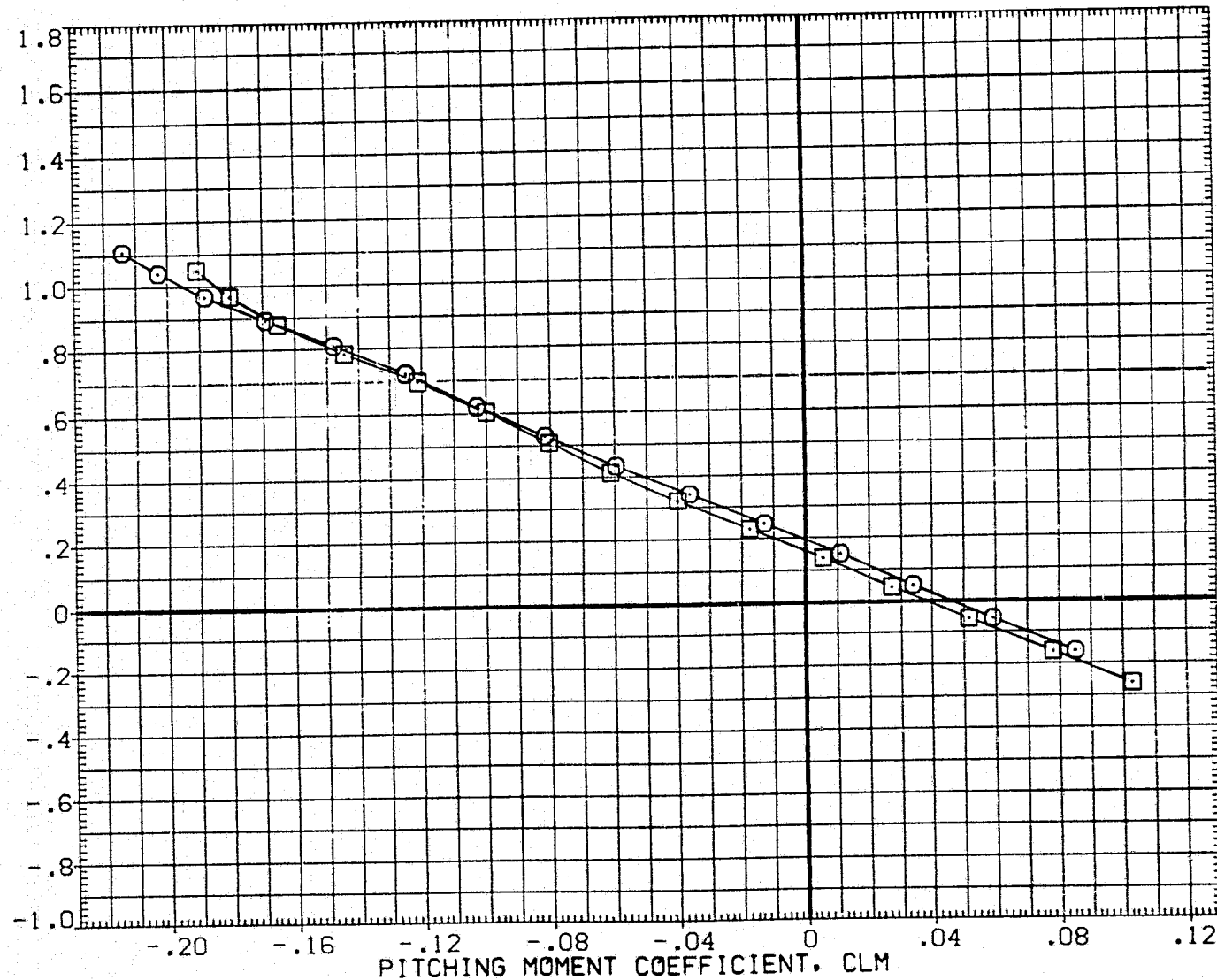


FIG.215 747+ORB(8 DEG),EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP  
 (A)MACH = .30

DATA SET SYMBOL		CONFIGURATION DESCRIPTION					STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION			
[RGM090]	○	CAS	K1	FO	H15.6	V9.1	(PLUS. ORB TC5 AT38.2 )	1.000	.000	.000	.000	SREF	5500.0000	SG.FT.
[RGM081]	□	CAS	K1	FO	H15.6	V9.1	(PLUS. ORB TC5 AT38.2 )	1.000	.000	45.000	20.000	LREF	327.8000	IN.
												BREF	2348.0000	IN.
												XMRP	1339.9100	IN. XC
												YMRP	.0000	IN. YC
												ZMRP	190.7500	IN. ZC
												SCALE	.0300	

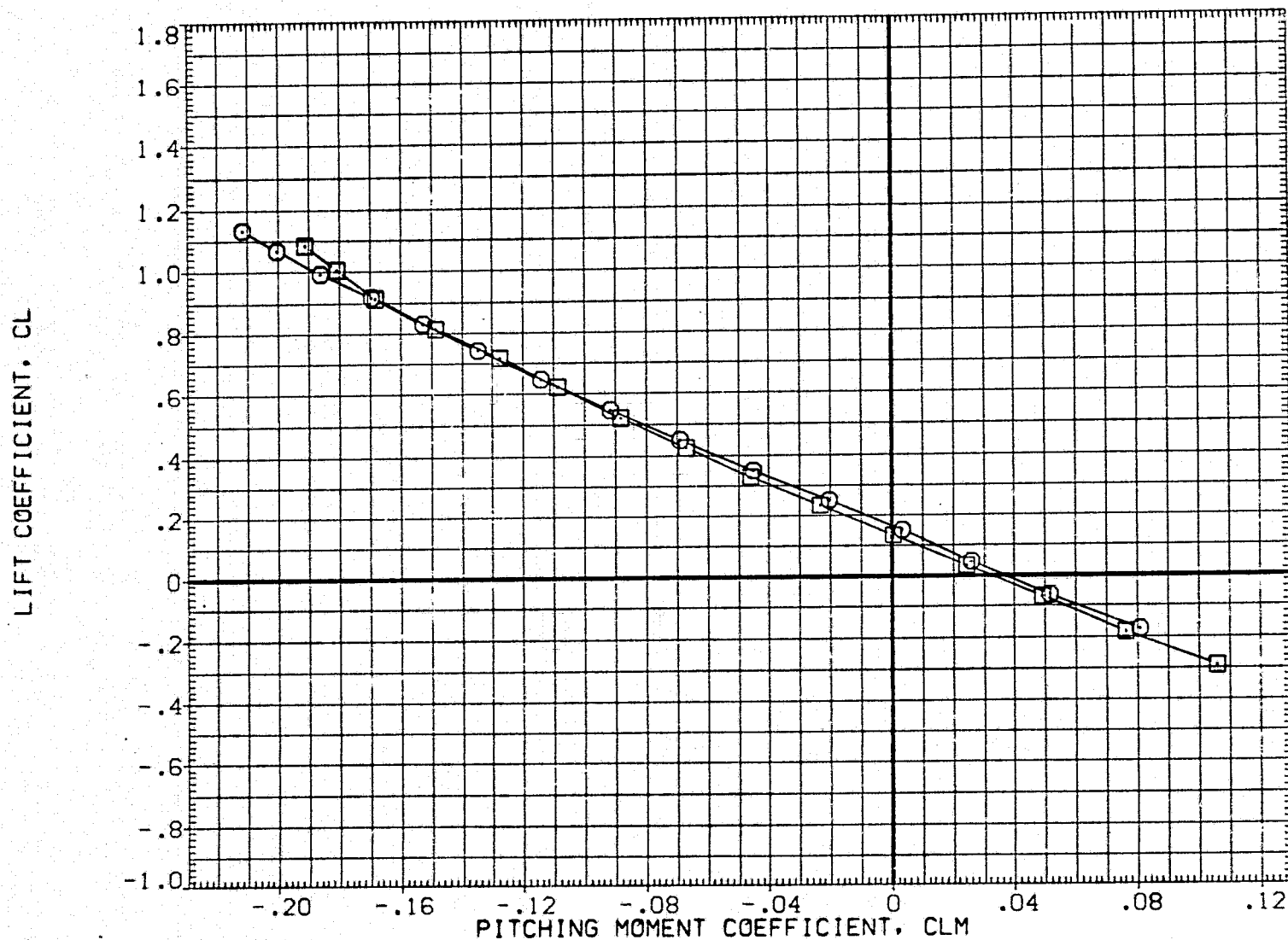


FIG.215 747+ORB(8 DEG).EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(RGM090)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	.000	.000	.000	SREF	5500.0000	SG.FT.
(RGM081)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	.000	45.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

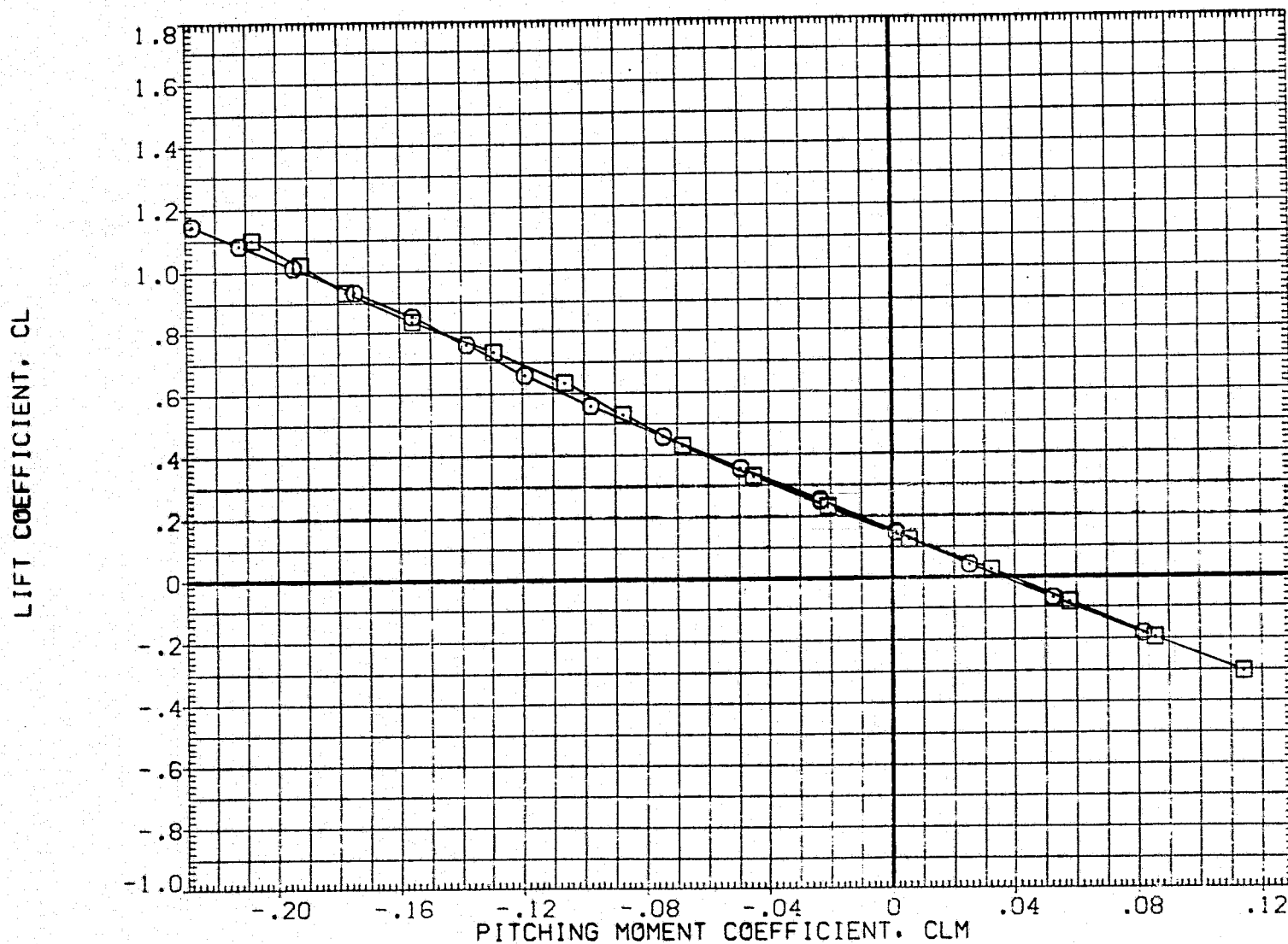


FIG.215 747+ORB(8 DEG), EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
(RGM090)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	1.000	.000	.000	.000	SREF	5500.0000 SQ.FT.
(RGM081)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	1.000	.000	45.000	20.000	LREF	327.8000 IN.
						BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

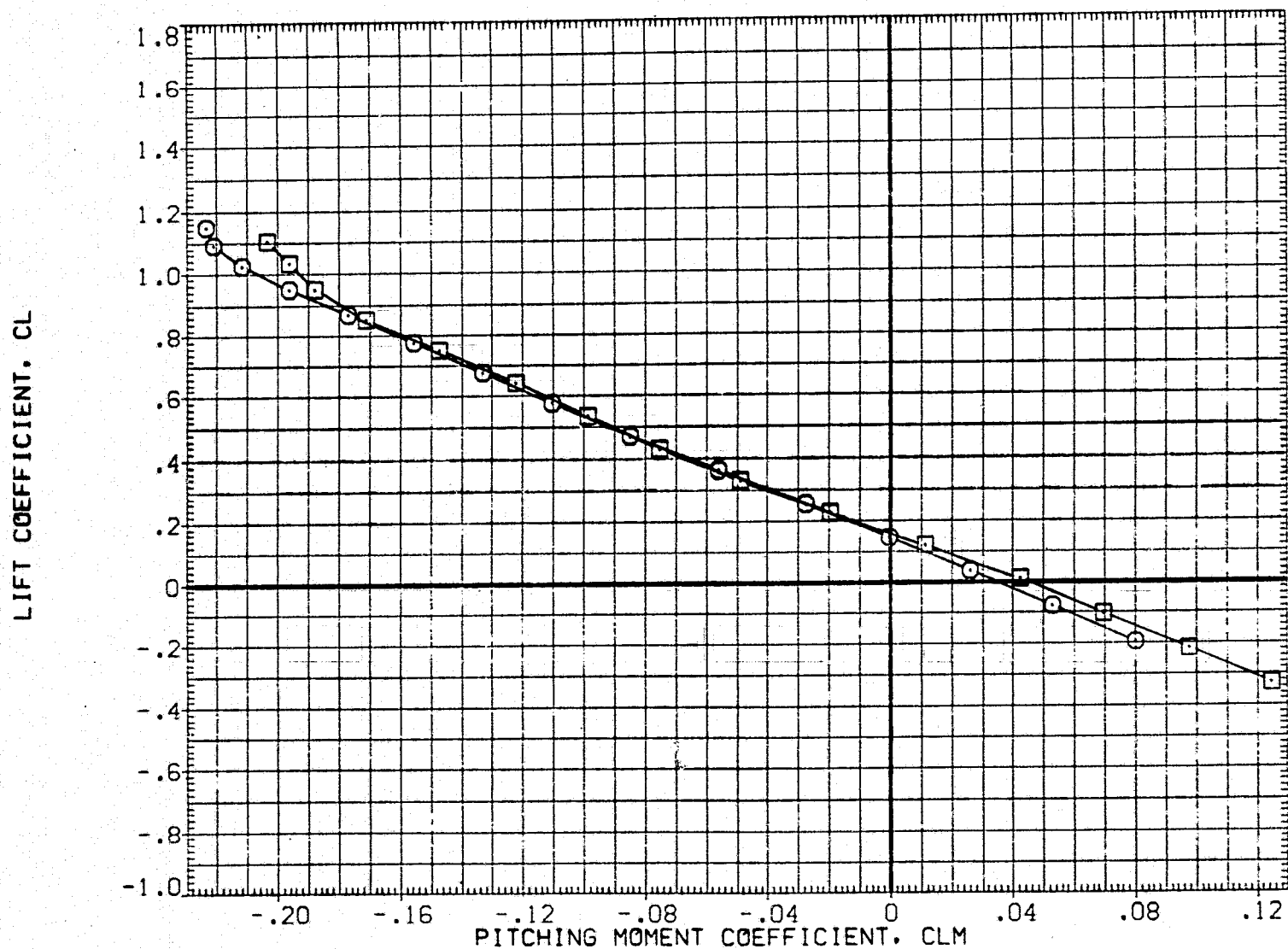


FIG.215 747+ORB(8 DEG),EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(O)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM090)  $\bigcirc$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

S1-2

S3-4

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.



FIG.215 747+ORB(8 DEG).EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM090)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB S1-2 S3-4 S5-6  
 1.000 .000 .000 .000  
 1.000 .000 45.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

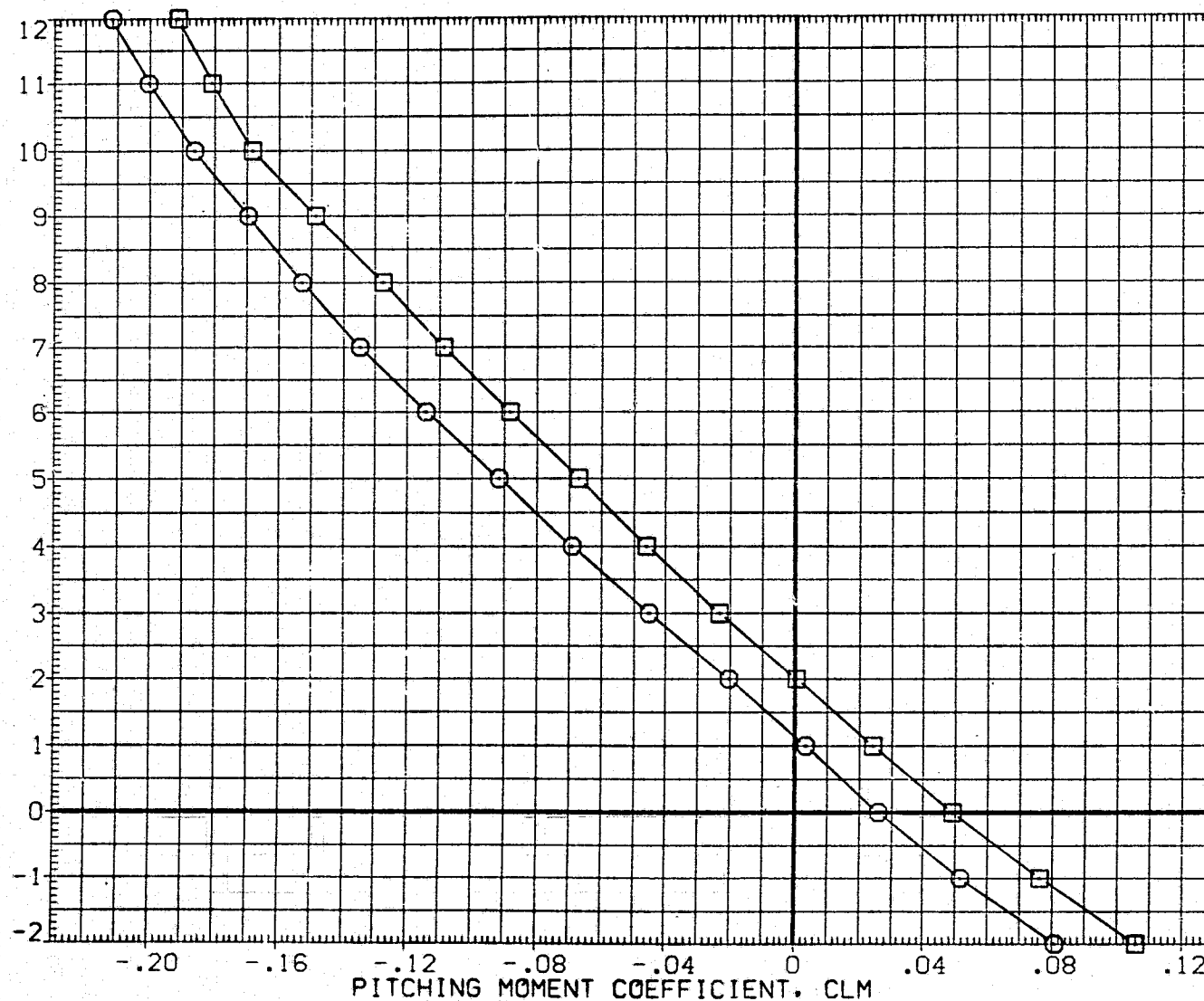


FIG.215 747+ORB(8 DEG),EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(B)MACH = .50



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGMD90)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGMD81)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB S1-2 S3-4 S5-6  
 1.000 .000 .000 .000  
 1.000 .000 45.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

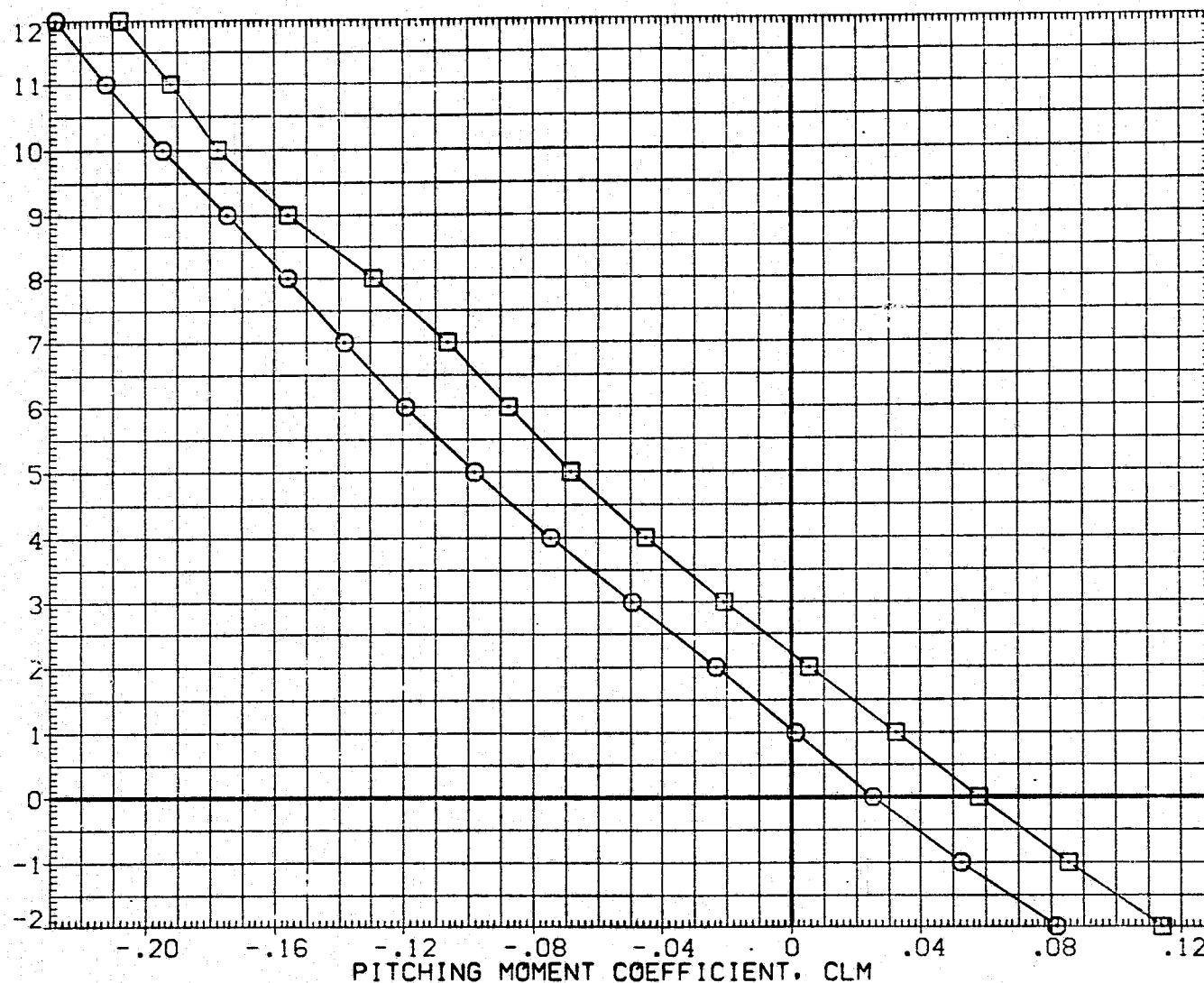


FIG.215 747+ORB(8 DEG).EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGMO90)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )  
 (RGMO81)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

STAB

S1-2

S3-4

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

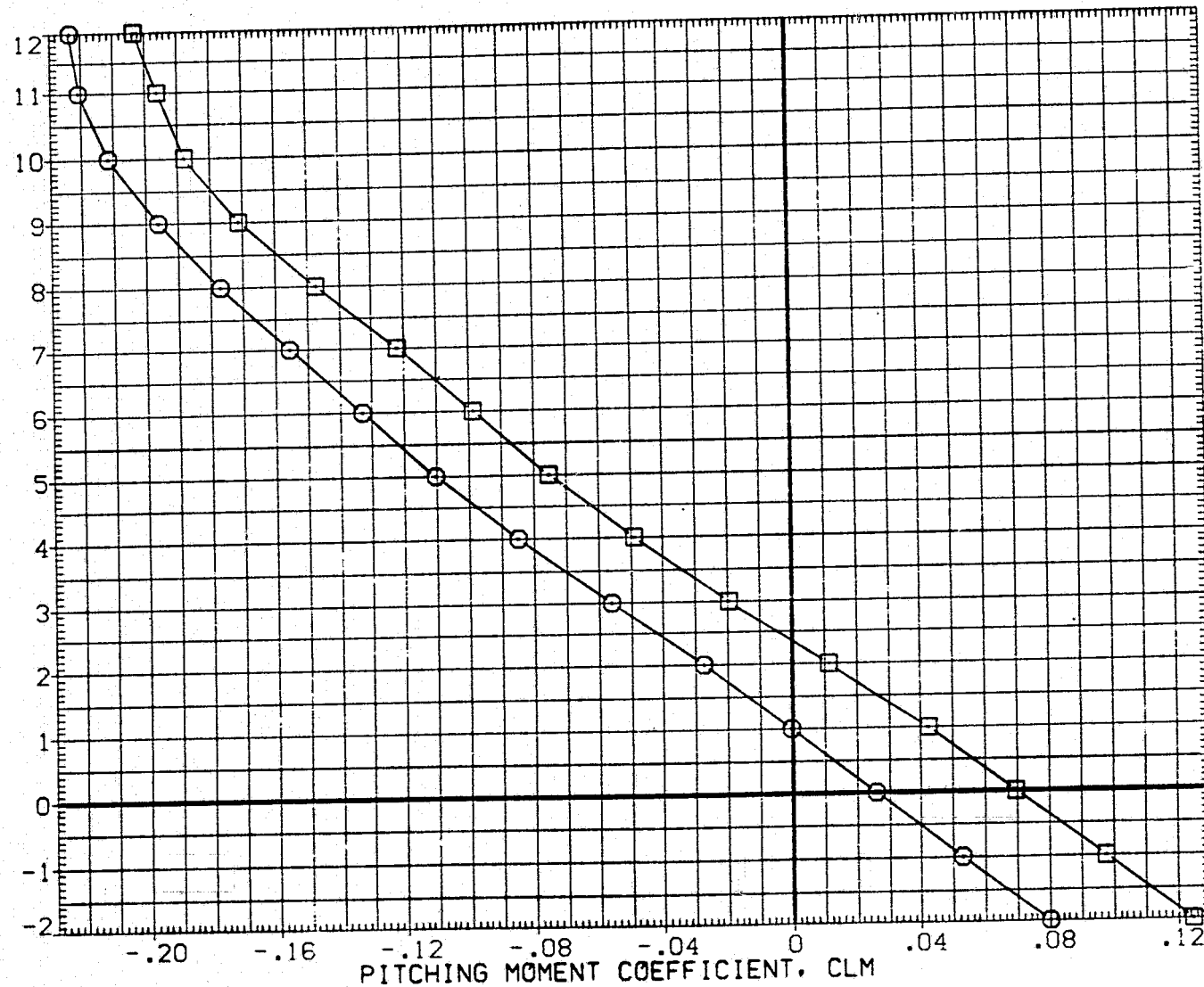


FIG.215 747+ORB(8 DEG),EFFECT OF STD IN-FLIGHT SPEED BRAKES, FLAPS UP

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(RGMD74)	○ CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
(RGMD75)	□ CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	45.000	45.000	45.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

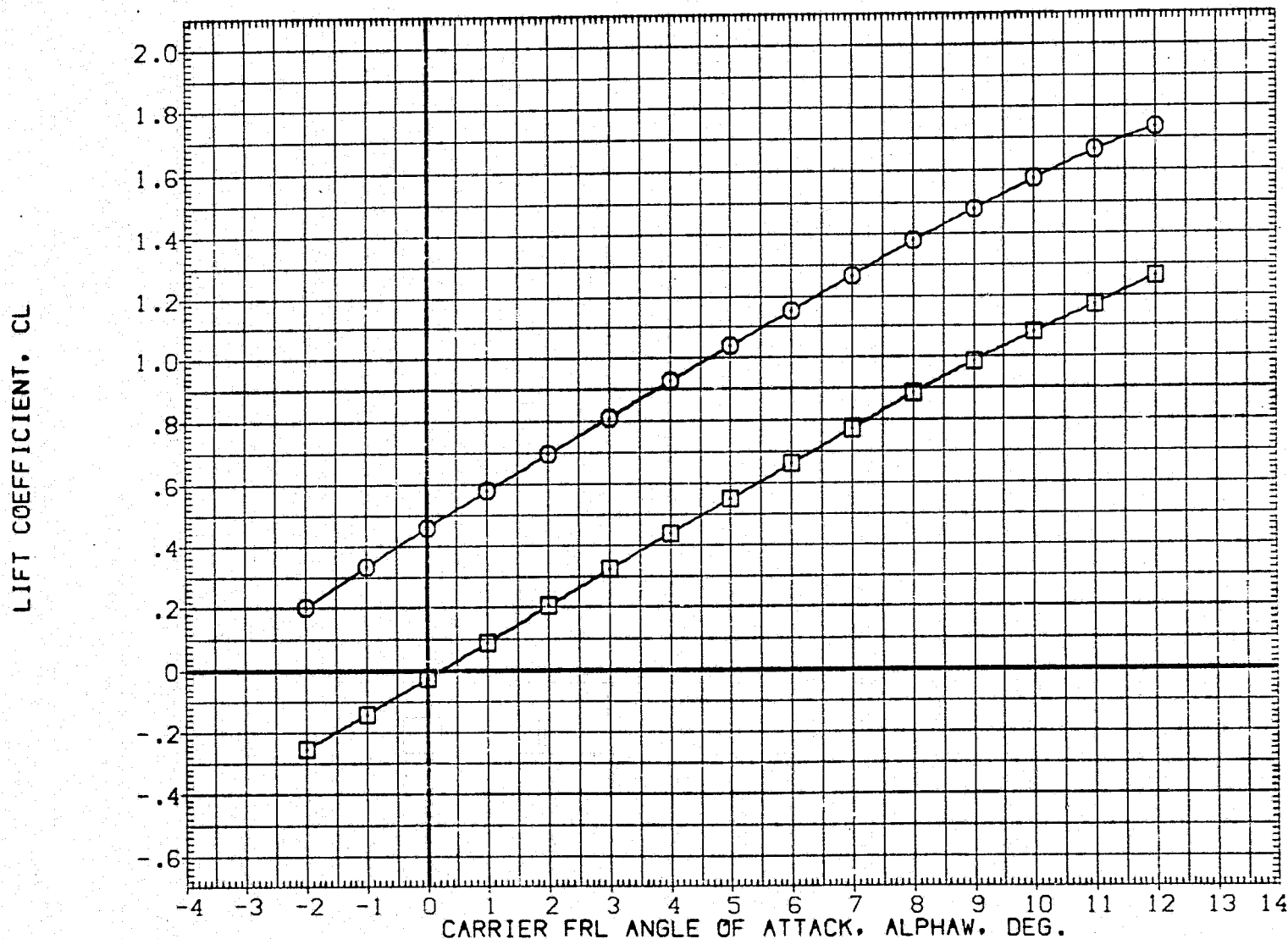


FIG.216 BASIC 747+ORB(10 DEG),EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM074)  $\square$  CA5 K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM075)  $\square$  CA5 K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )

STAB

1.000  
 1.000

S1-2

.000  
 45.000

S3-4

.000  
 45.000

S5-6

.000  
 45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

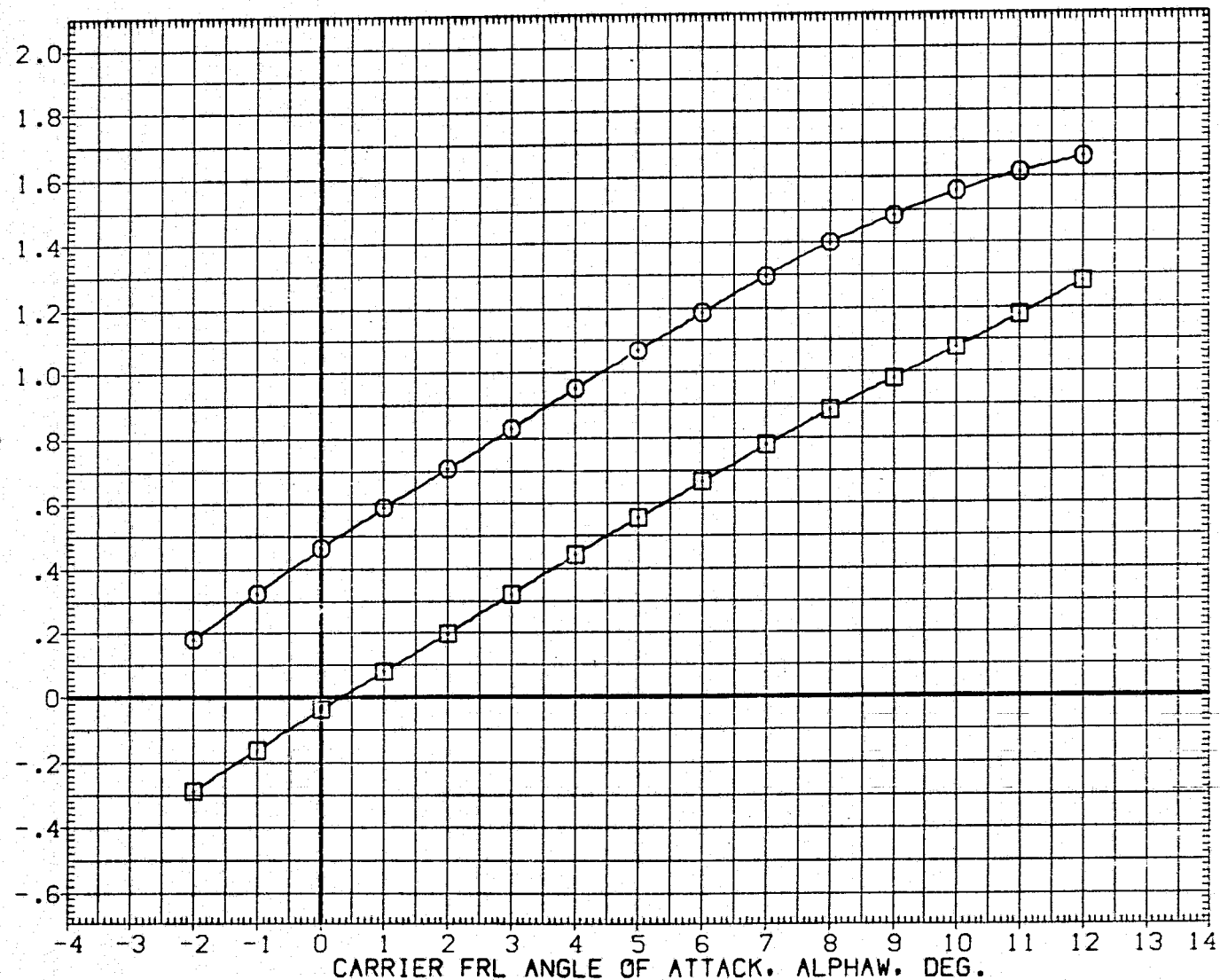


FIG.216 BASIC 747+ORB(10 DEG),EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(B)MACH = .60-

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(RGM074)	○ CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1)	1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
(RGM075)	□ CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1)	1.000	45.000	45.000	45.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

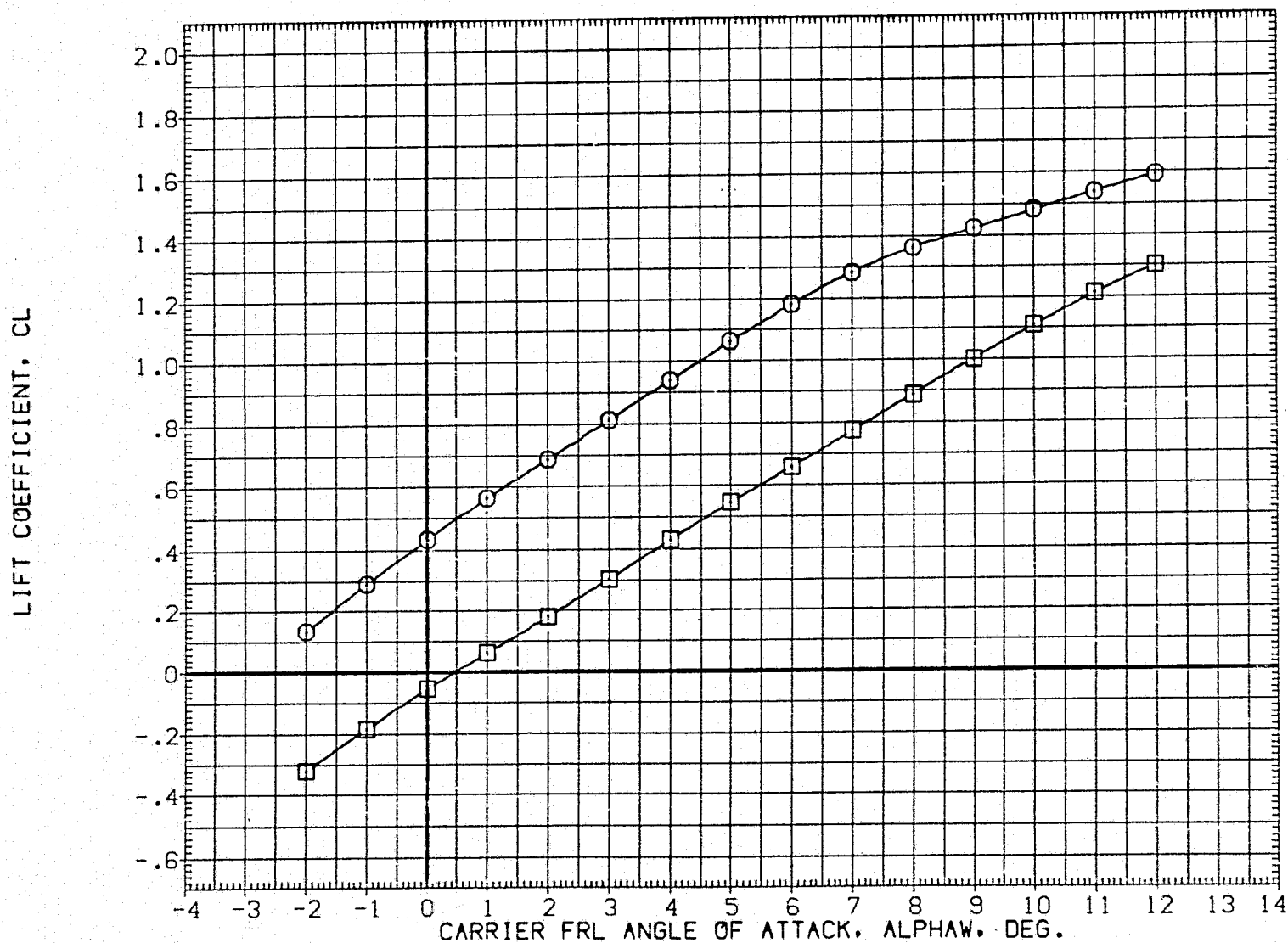


FIG.216 BASIC 747+ORB(10 DEG),EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(RGM074)	○ CAS K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )	1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
(RGM075)	□ CAS K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )	1.000	45.000	45.000	45.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

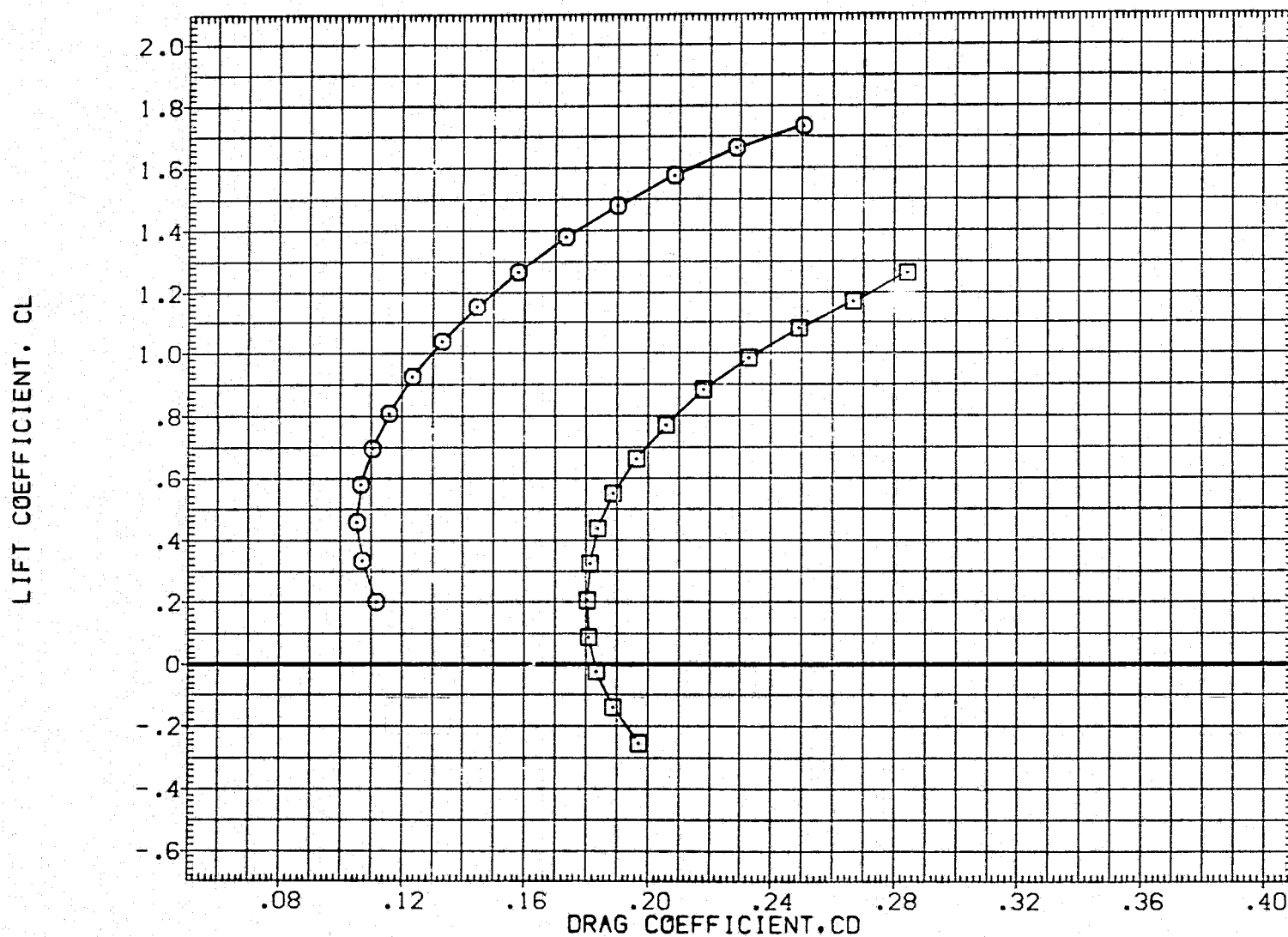


FIG.216 BASIC 747+ORB(10 DEG),EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM074)  $\square$  CAS KI F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM075)  $\square$  CAS KI F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )

STAB S1-2 S3-4 S5-6  
 1.000 .000 .000 .000  
 1.000 45.000 45.000 45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

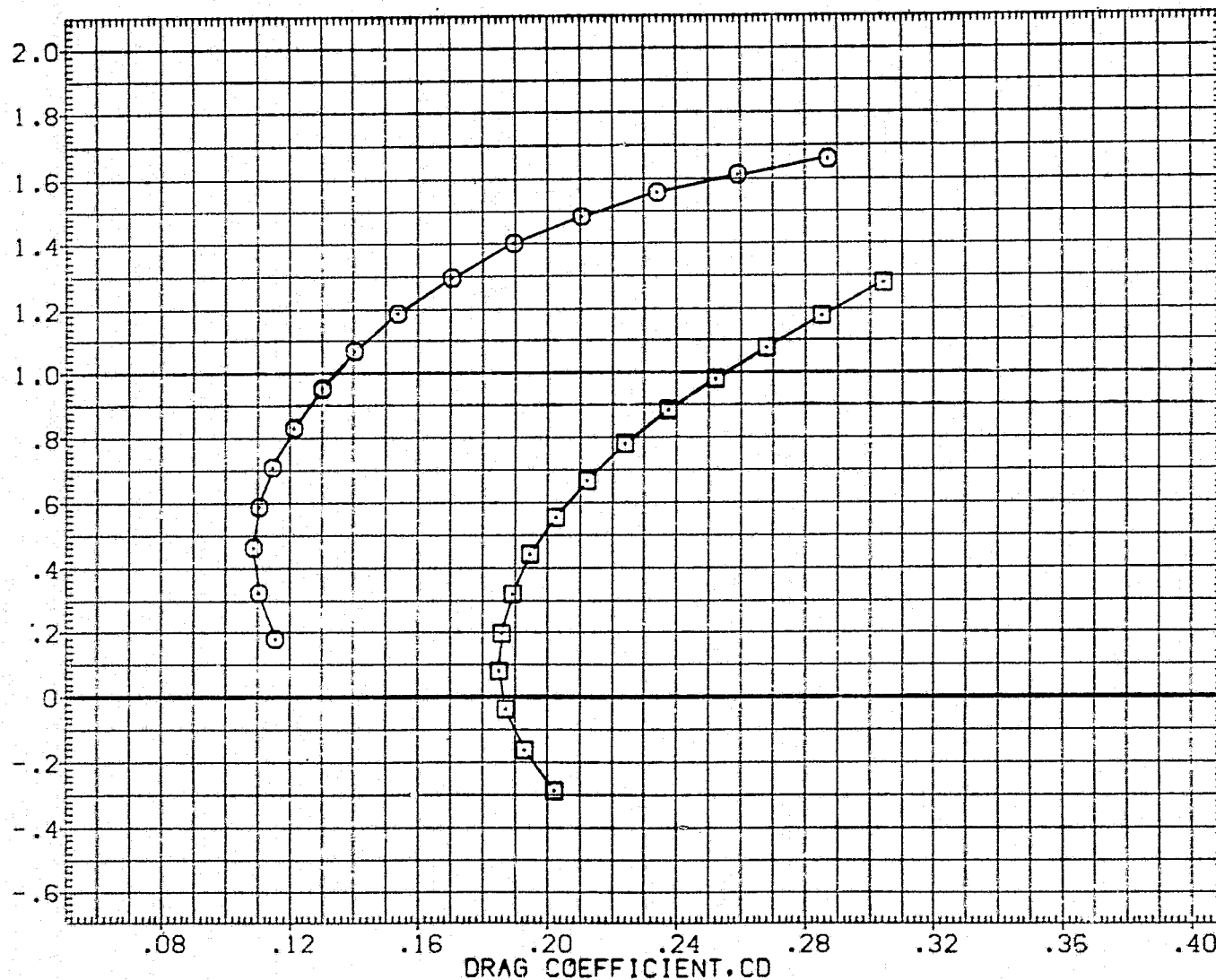


FIG.216 BASIC 747+ORB(10 DEG),EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM074)  $\square$  CAS K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )  
 (RGM075)  $\square$  CAS K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )

STAB

S1-2

S3-4

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2349.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

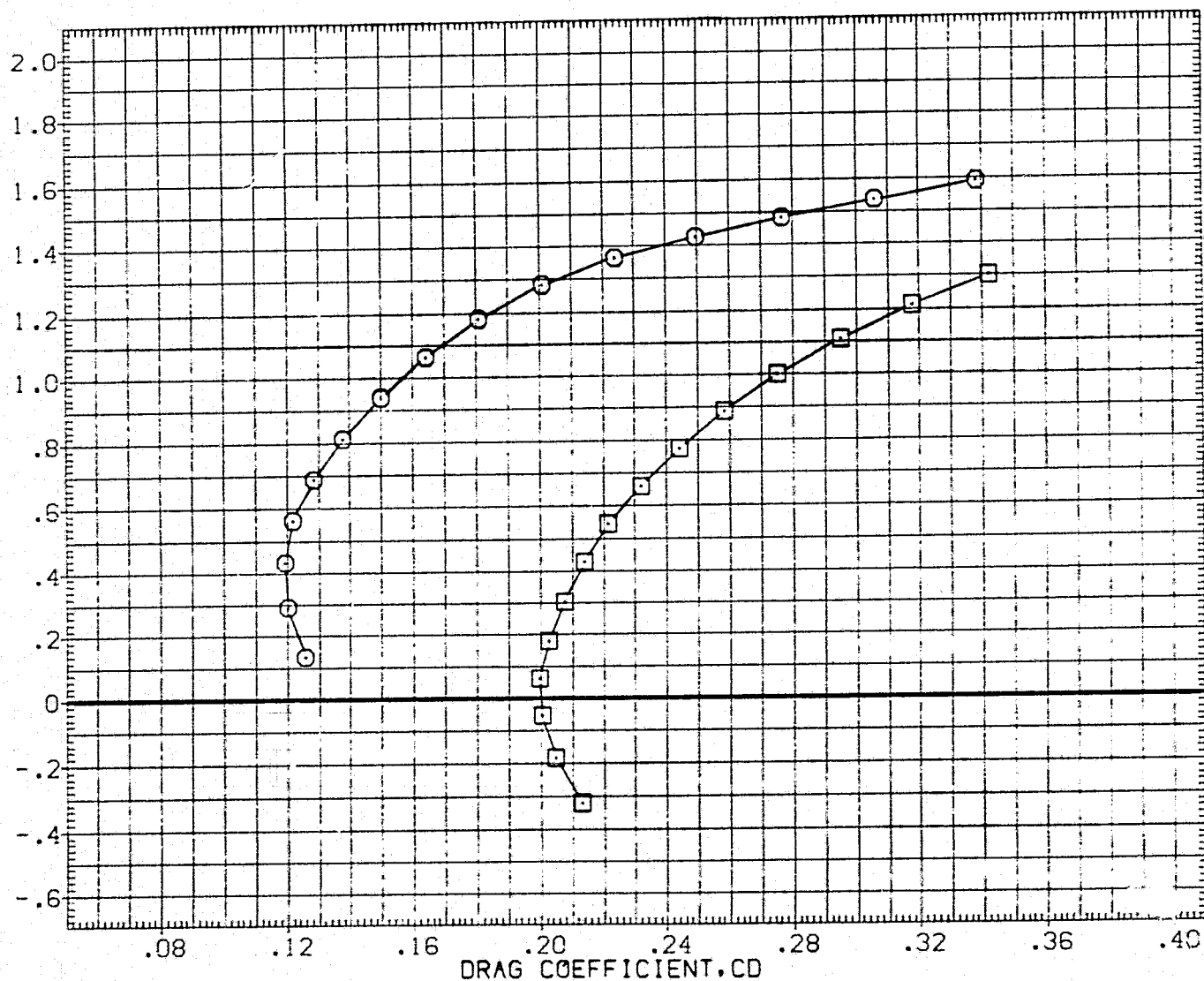


FIG.216 BASIC 747+ORB(10 DEG),EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(C)MACH = .70



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RJM074)  $\square$  CA5 KI F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RJM075)  $\square$  CA5 KI F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )

STAB S1-2 S3-4 S5-6  
 1.000 .000 .000 .000  
 1.000 45.000 45.000 45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

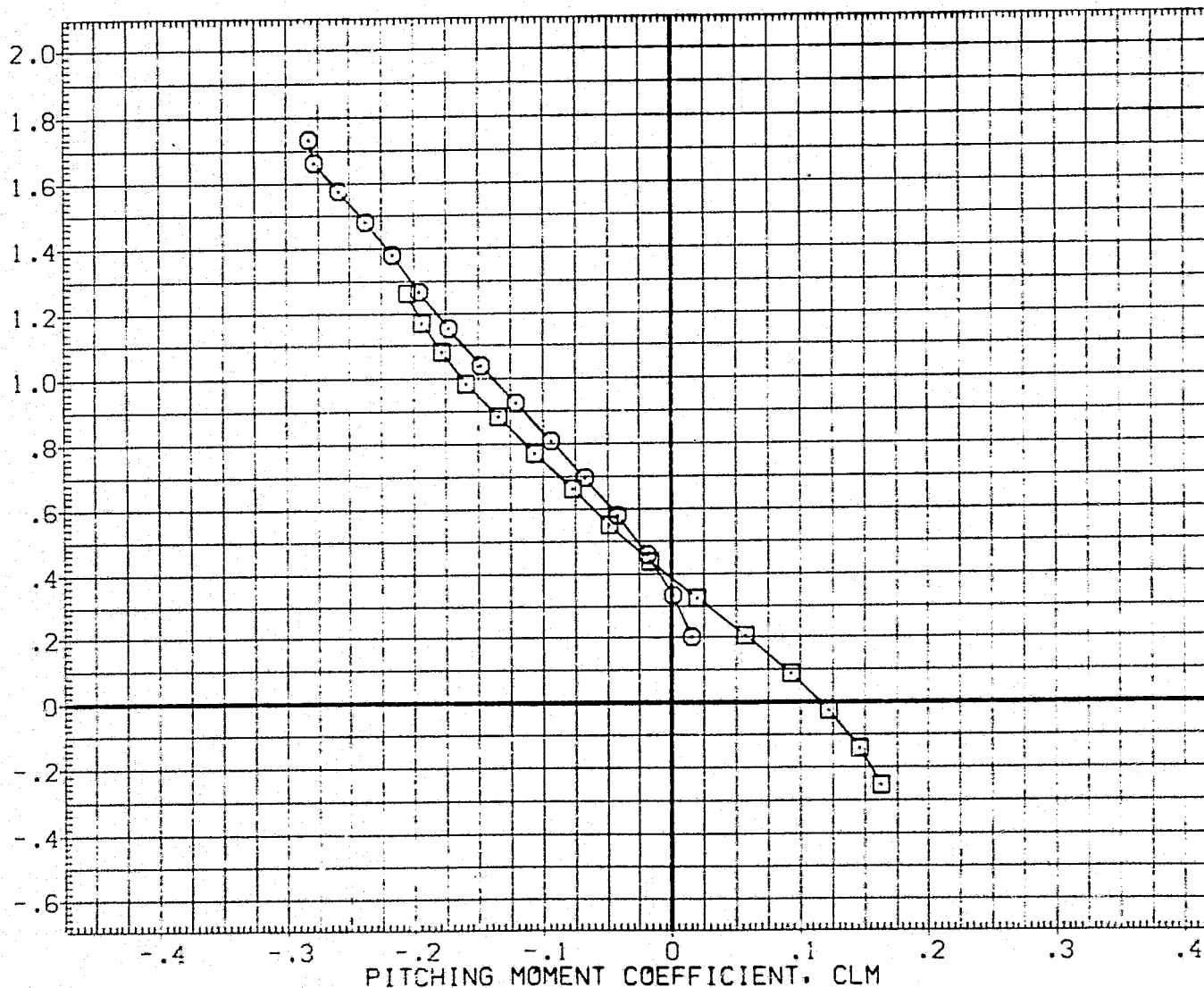
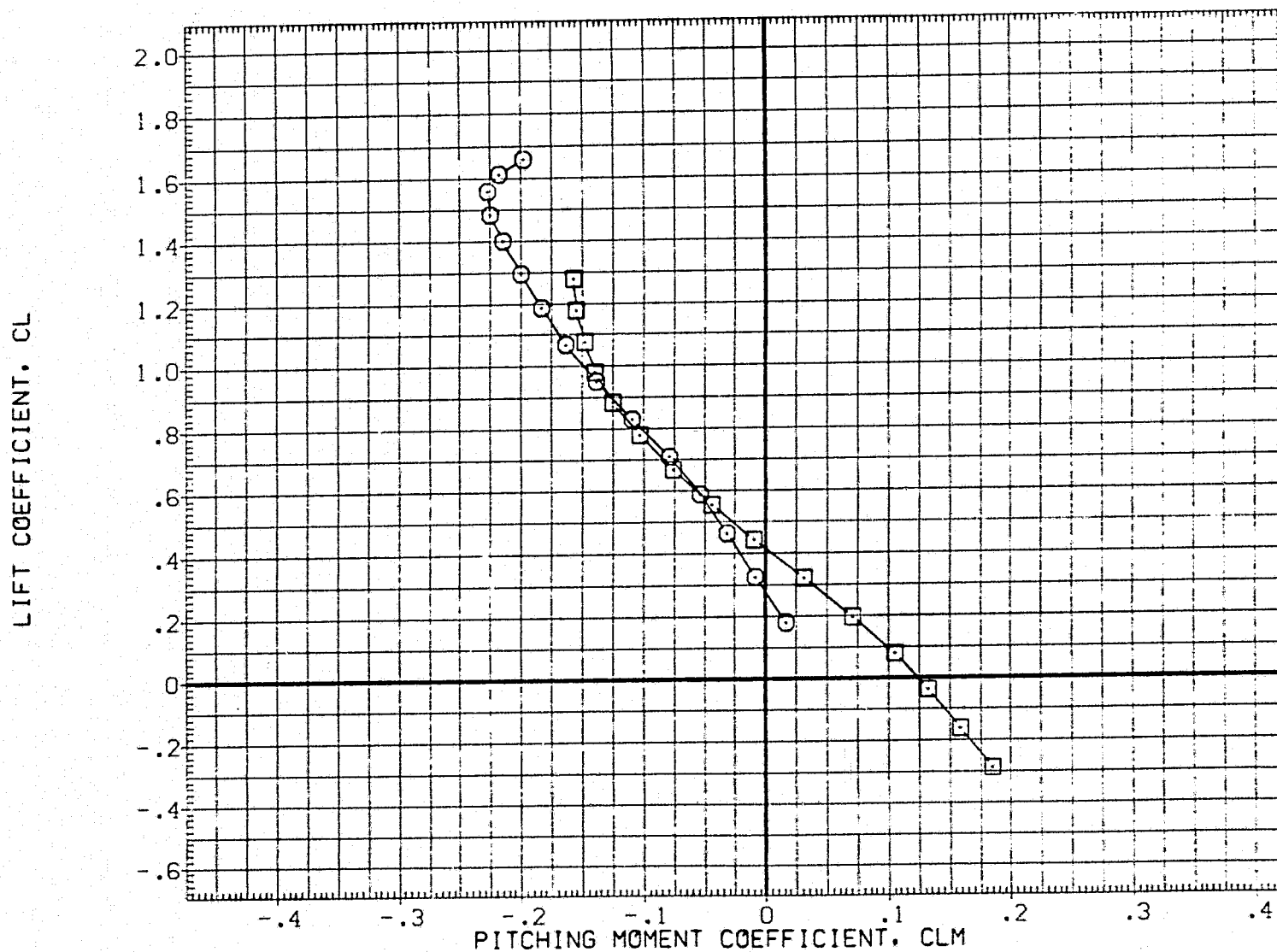


FIG.216 BASIC 747+ORB(10 DEG),EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	SI-2	S3-4	SS-6	REFERENCE INFORMATION		
(RGM074)	CA5 K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )	1.000	.000	.000	.000	SREF	5500.0000	50. FT.
(RGM075)	CA5 K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )	1.000	45.000	45.000	45.000	LREF	327.8000	IN.
						BREF	2349.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0000	



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM074)  $\bigcirc$  CAS K1 F20 H15.1A V9.1 (PLUS. CRB TCS AT38.1 )  
 (RGM075)  $\square$  CAS K1 F20 H15.1A V9.1 (PLUS. CRB TCS AT38.1 )

STAB

S1-2

S3-4

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

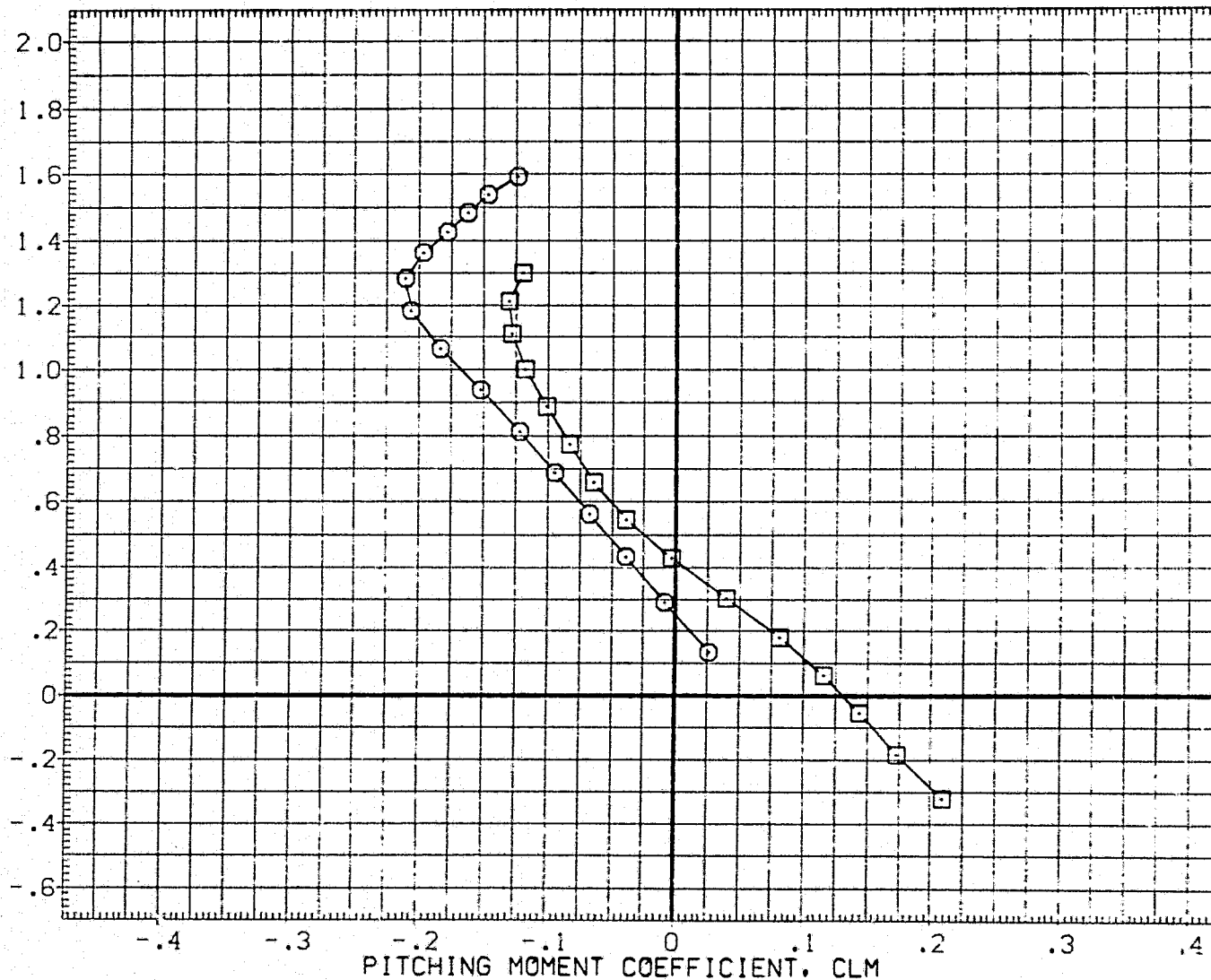


FIG. 216 BASIC 747+CRB(10 DEG), EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
(R3M074) <input type="radio"/>	CA5 K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )	1.000	.000	.000	.000	SREF	5500.0000 SQ.FT.
(R3M075) <input type="checkbox"/>	CA5 K1 F20 H15.1A V9.1 (PLUS. CRB TCS AT38.1 )	1.000	45.000	45.000	45.000	LREF	327.8000 IN.
						BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

CARRIER FRL ANGLE OF ATTACK. ALPHAW, DEG.

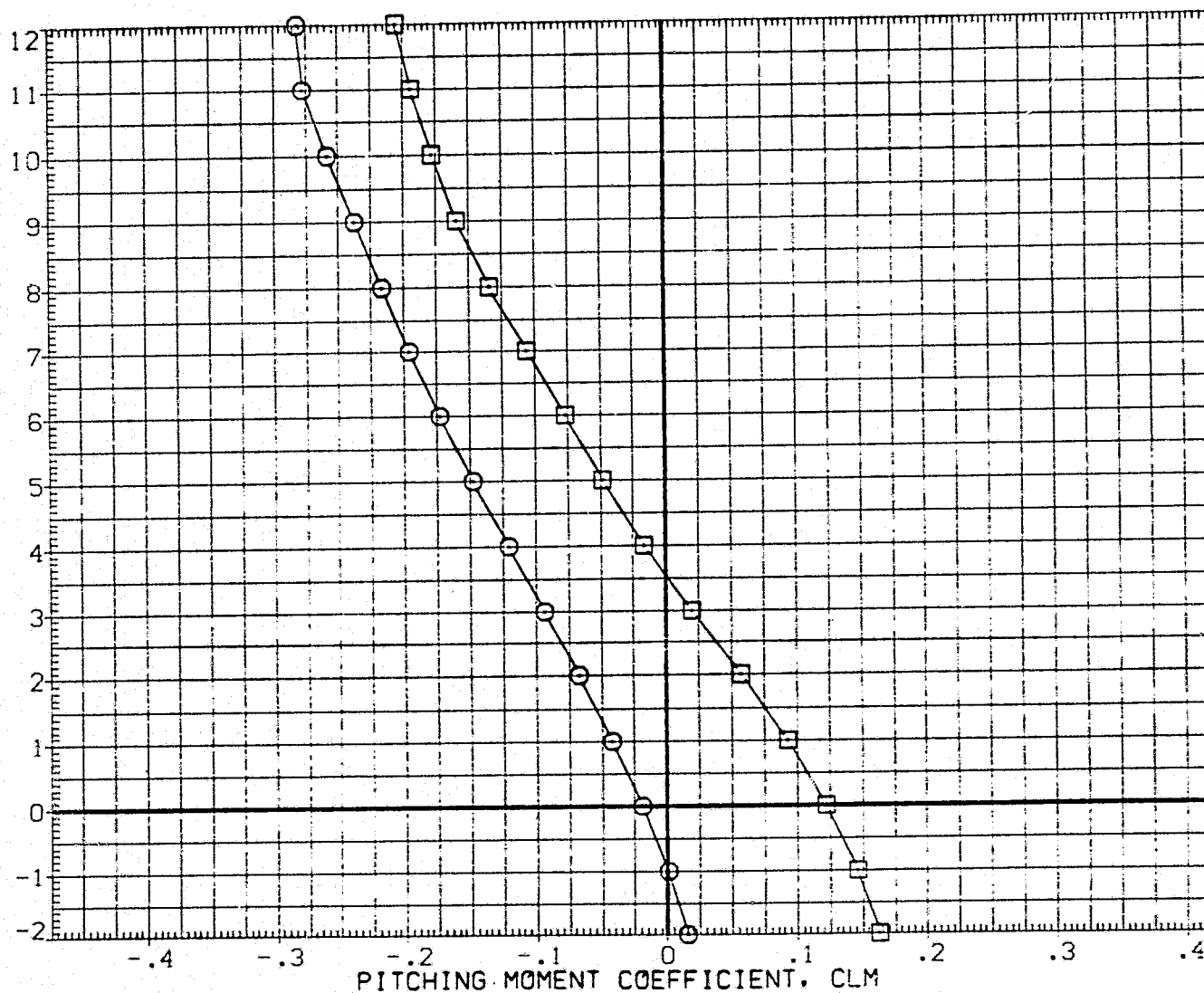


FIG.216 BASIC 747+ORB(10 DEG),EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(R3M074)  $\square$  CAS K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )  
 (RGM075)  $\square$  CAS K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )

STAB

1.000  
1.000

S1-2

.000  
45.000

S3-4

.000  
45.000

S5-6

.000  
45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK. ALPHAW, DEG.

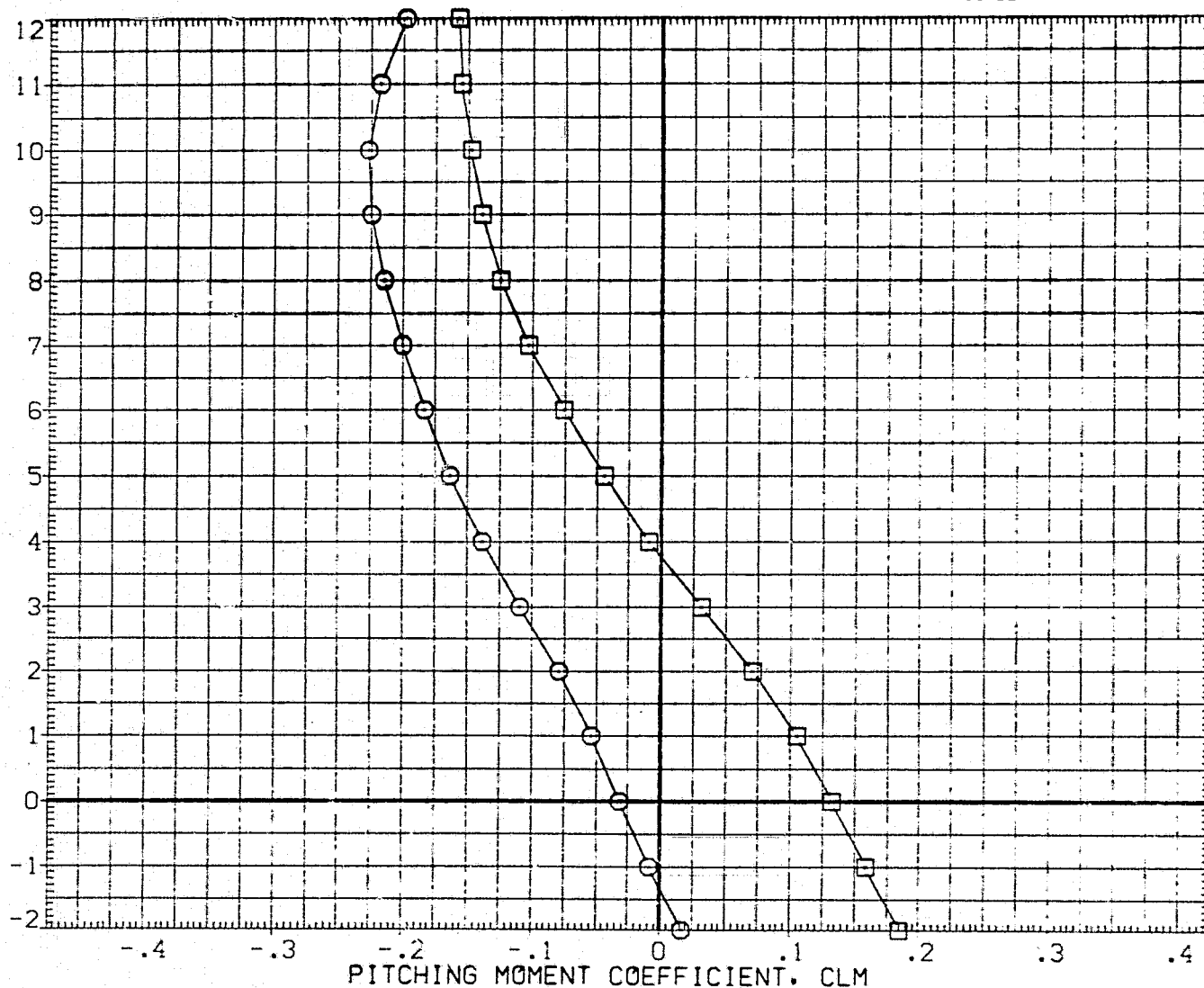


FIG.216 BASIC 747+ORB(10 DEG),EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(RGM074)	○ CAS KI F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1)	1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
(RGM075)	□ CAS KI F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1)	1.000	45.000	45.000	45.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

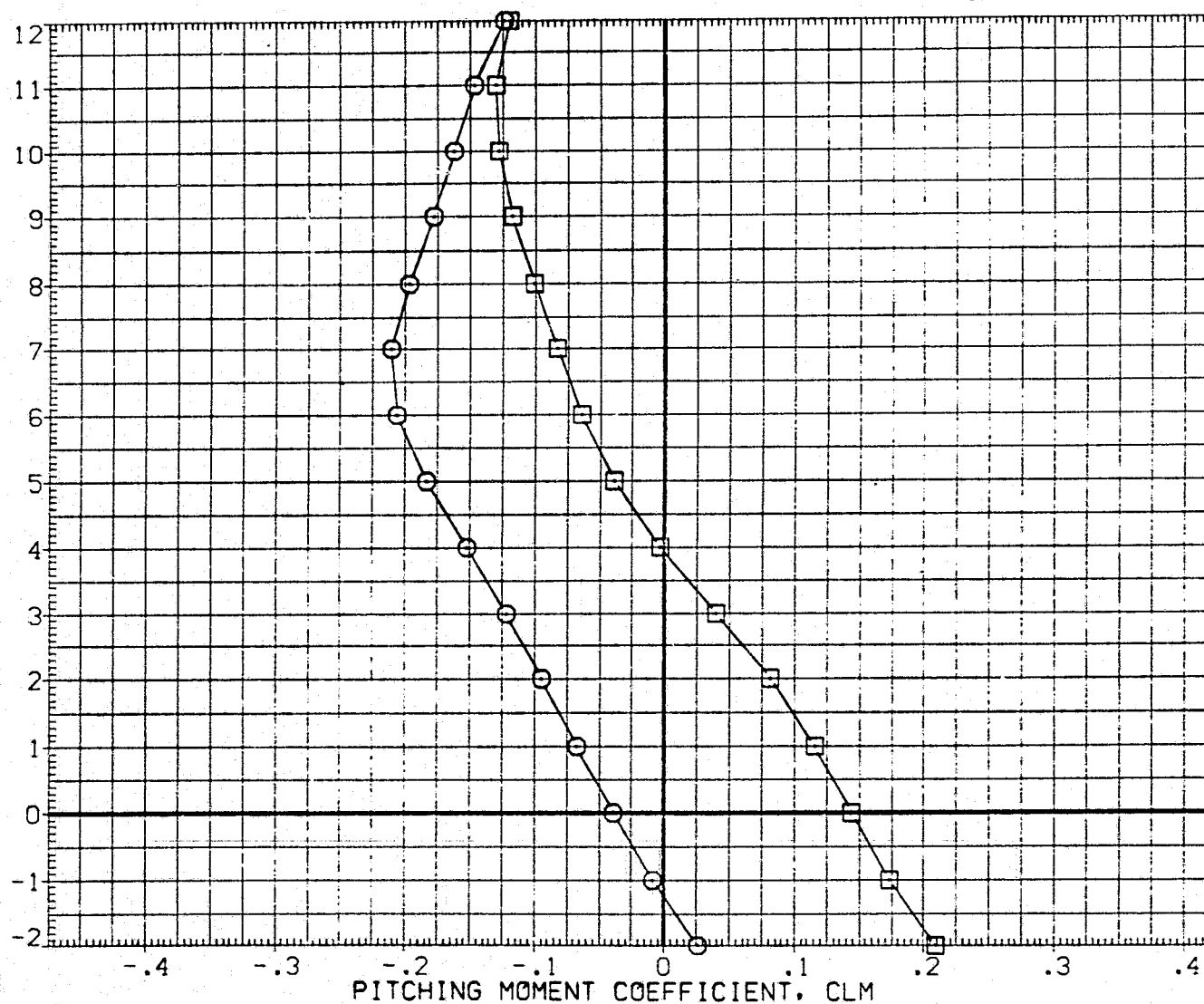


FIG.216 BASIC 747+ORB(10 DEG),EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20  
(C)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RSM059) ○ BTWT-1431CA5 KI F20 H15.6 V9.1  
 (RSM061) □ BTWT-1431CA5 KI F20 H15.6 V9.1

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
1.000	.000	.000	.000	SREF	5500.0000 SQ.FT.
1.000	45.000	45.000	45.000	LREF	327.8000 IN.
				BREF	2349.0000 IN.
				YMRP	1339.9100 IN. XC
				ZMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

LIFT COEFFICIENT, CL

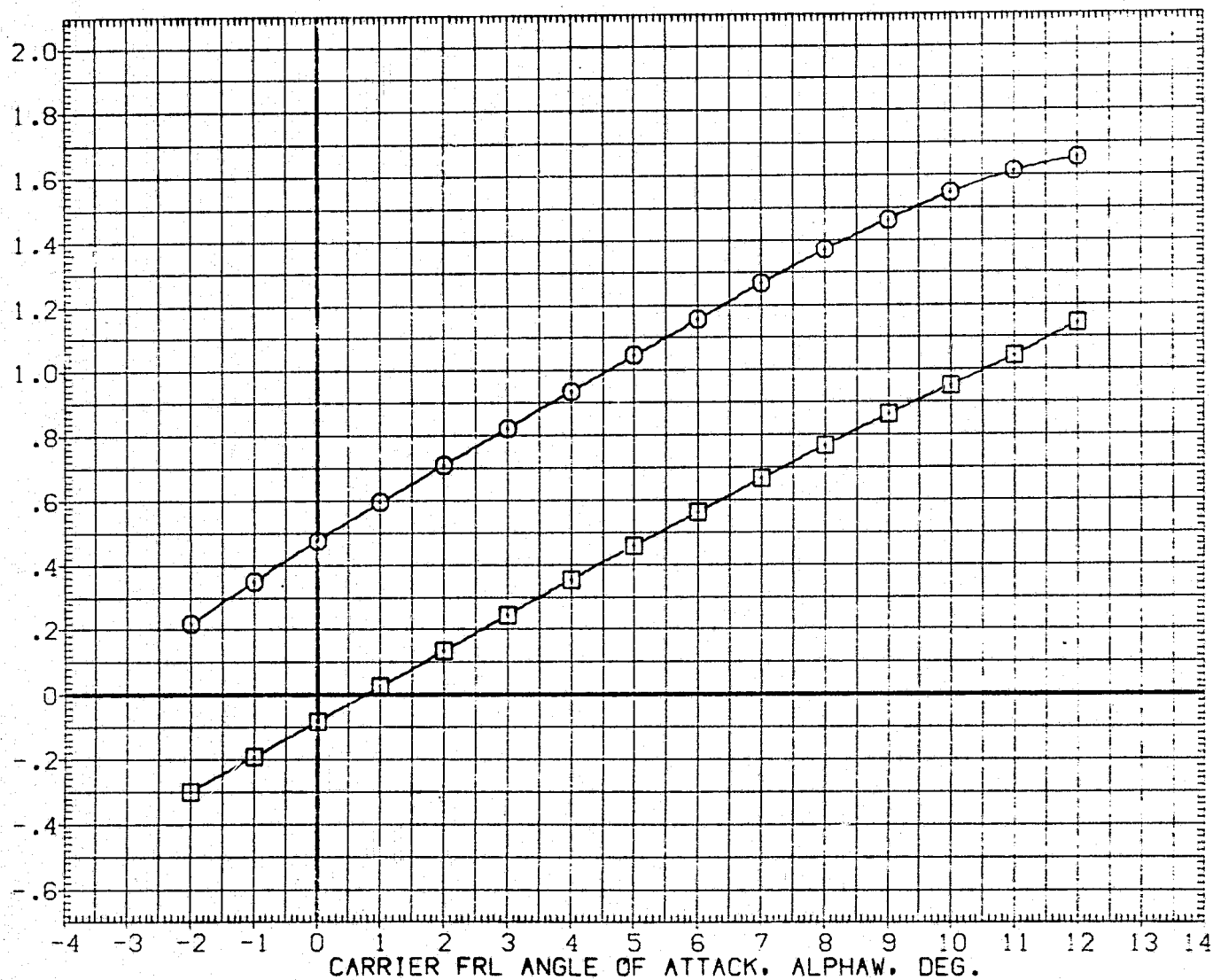




FIG.217 747 ALONE, EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO59)  BTWT-1431CAS K1 F20 H15.6 V9.1  
 (RGMO61)  BTWT-1431CAS K1 F20 H15.6 V9.1

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
1.000	45.000	45.000	45.000	LREF	327.8000	IN.
				BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

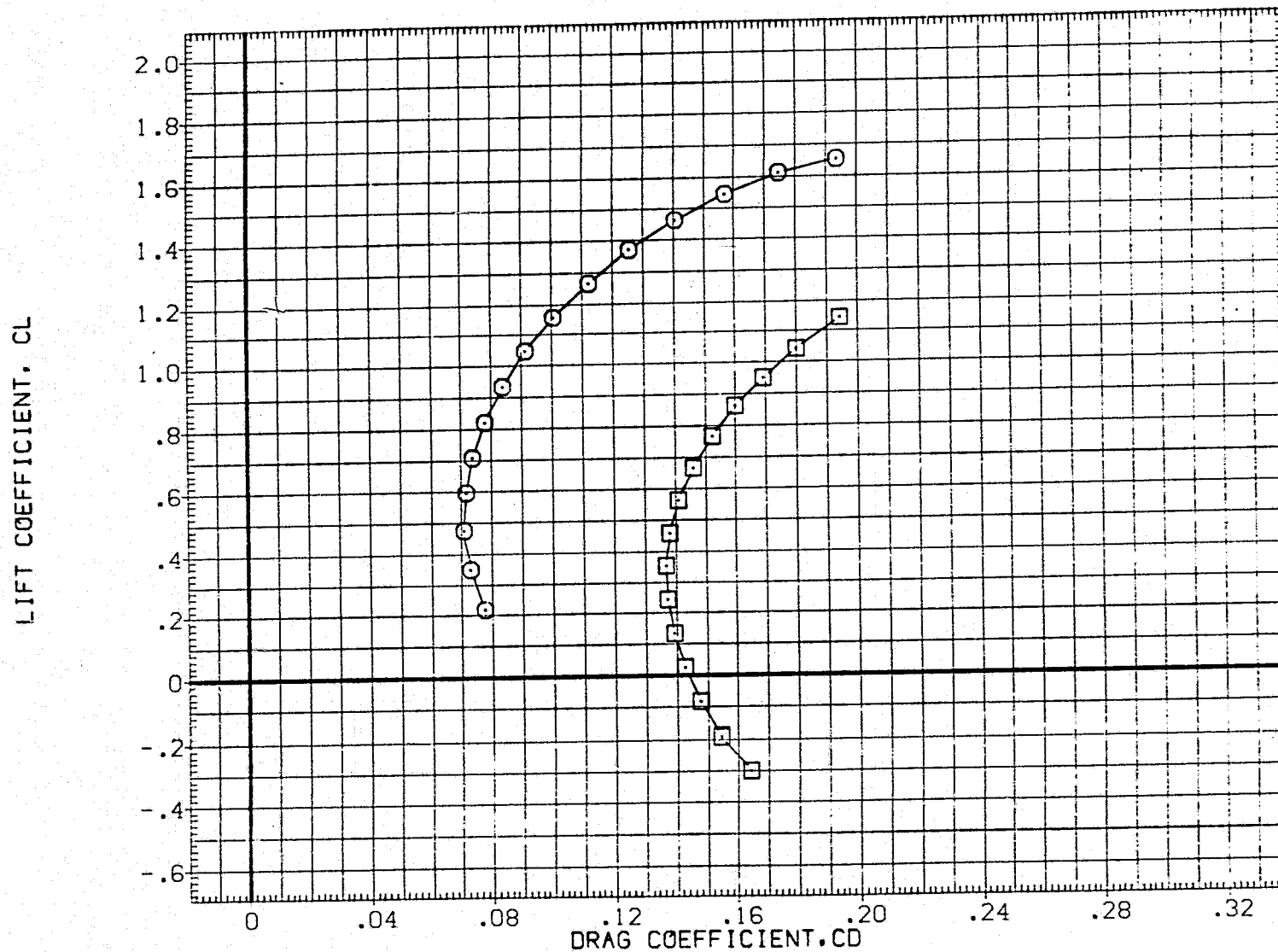


FIG.217 747 ALONE, EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20  
 (A) MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM059)	BTWT-1431CA5 K1 F20 H15.6 V9.1
(RGM061)	BTWT-1431CA5 K1 F20 H15.6 V9.1

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
1.000	.000	.000	.000	SREF	5500.0000 SQ.FT.
1.000	45.000	45.000	45.000	LREF	327.8000 IN.
				BREF	2348.0000 IN.
				XMRP	1339.9100 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

LIFT COEFFICIENT, CL

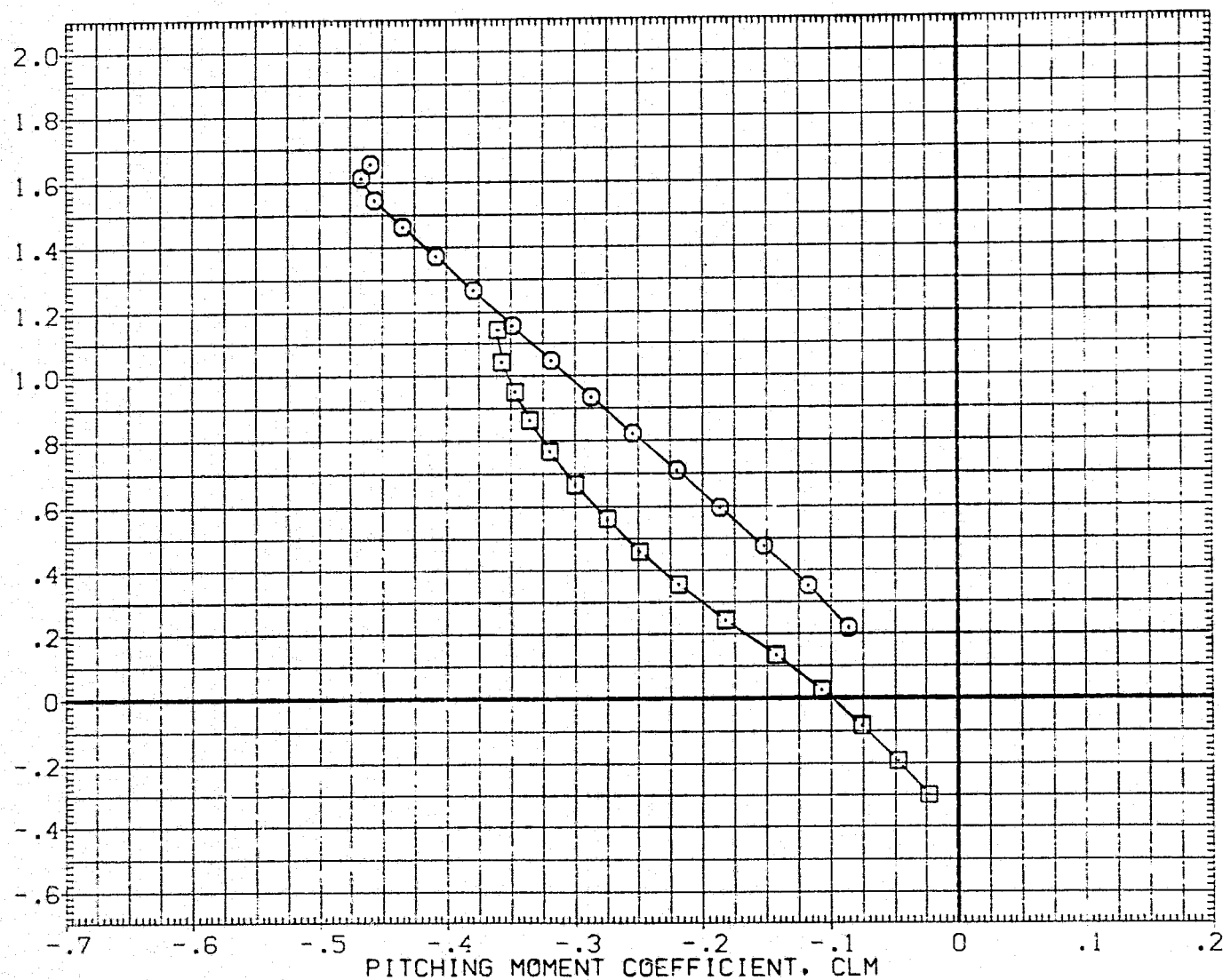


FIG.217 747 ALONE,EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM059) BTWT-1431CA5 K1 F20 H15.6 V9.1  
 (RGM061) BTWT-1431CA5 K1 F20 H15.6 V9.1

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
1.000	45.000	45.000	45.000	LREF	327.8000	IN.
				BREF	2348.0000	IN.
				XMWP	1339.9100	IN. XC
				YMWP	.0000	IN. YC
				ZMWP	190.7500	IN. ZC
				SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

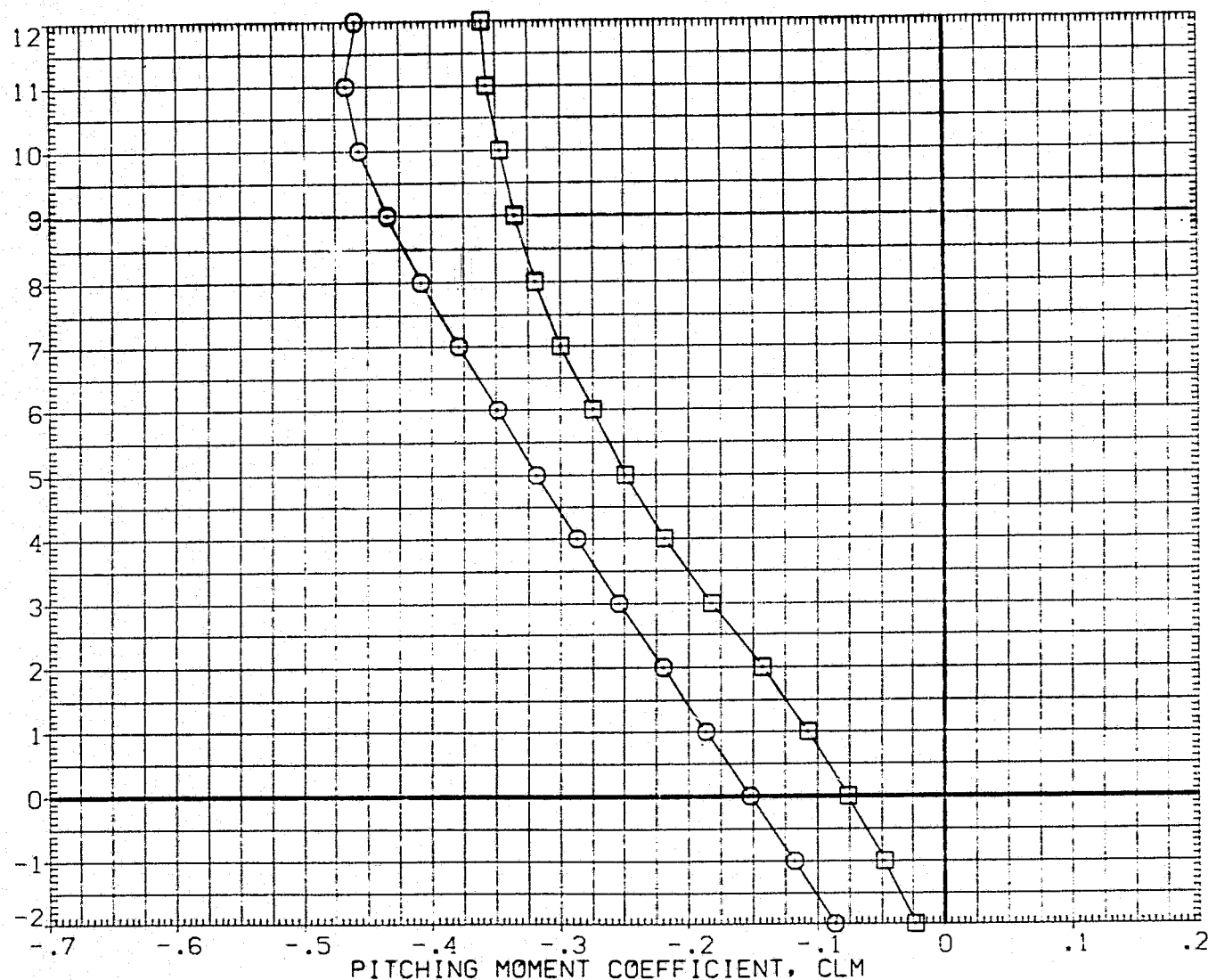


FIG.217 747 ALONE,EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(R5M071)  $\bigcirc$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (R5M070)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (F3M065)  $\diamond$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

STAB

S1-2

S3-4

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP :90.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

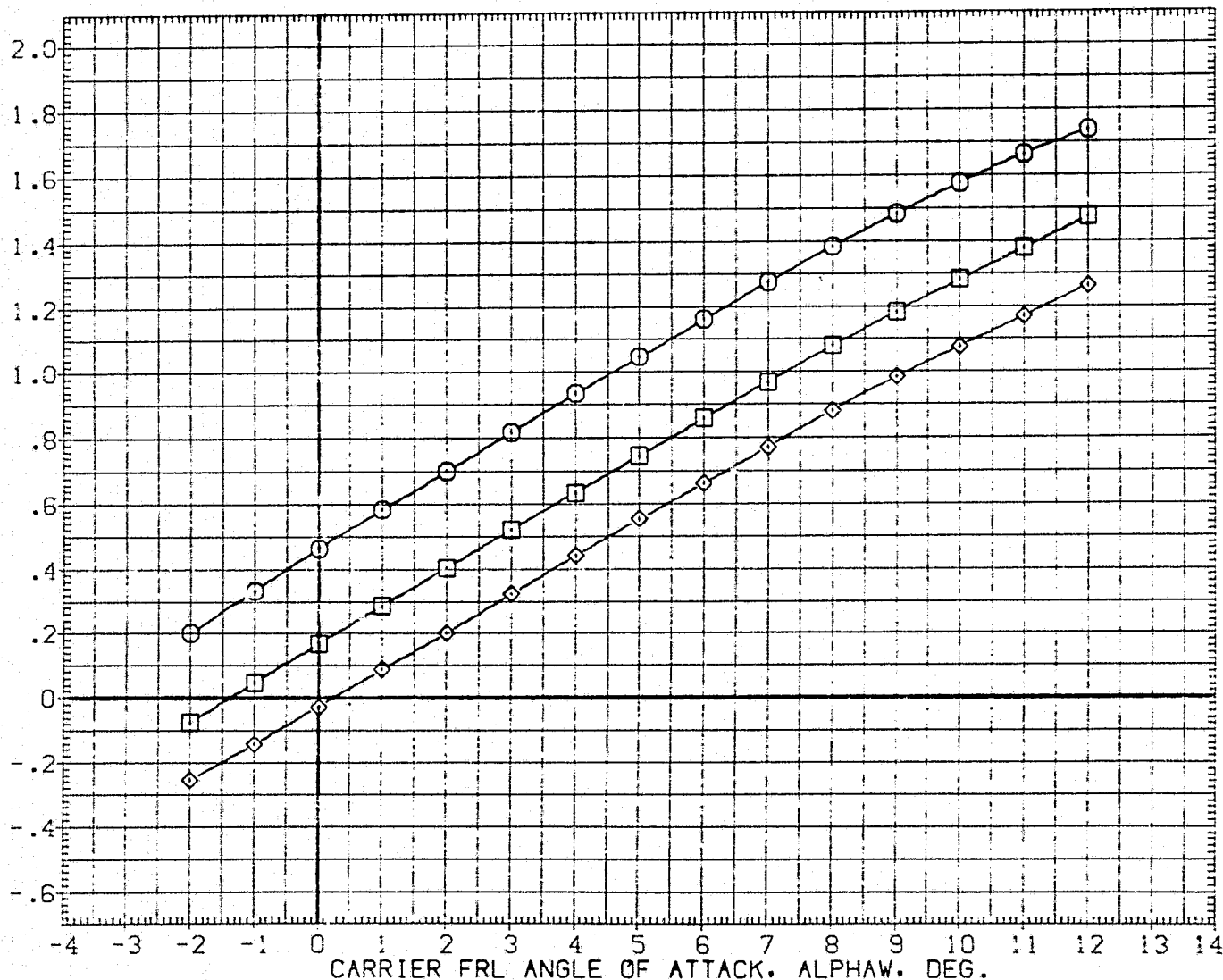


FIG.218 747+ORB(10 DEG),EFFECT OF STD BRAKES OR FULL 45 SPOILERS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(RGM071)	□ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
(RGM070)	□ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	1.000	.000	45.000	20.000	LREF	327.6000	IN.
(FGM065)	◇ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	1.000	45.000	45.000	45.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN.
						YMRP	.0000	IN.
						ZMRP	190.7500	IN.
						SCALE	.0300	

LIFT COEFFICIENT, CL

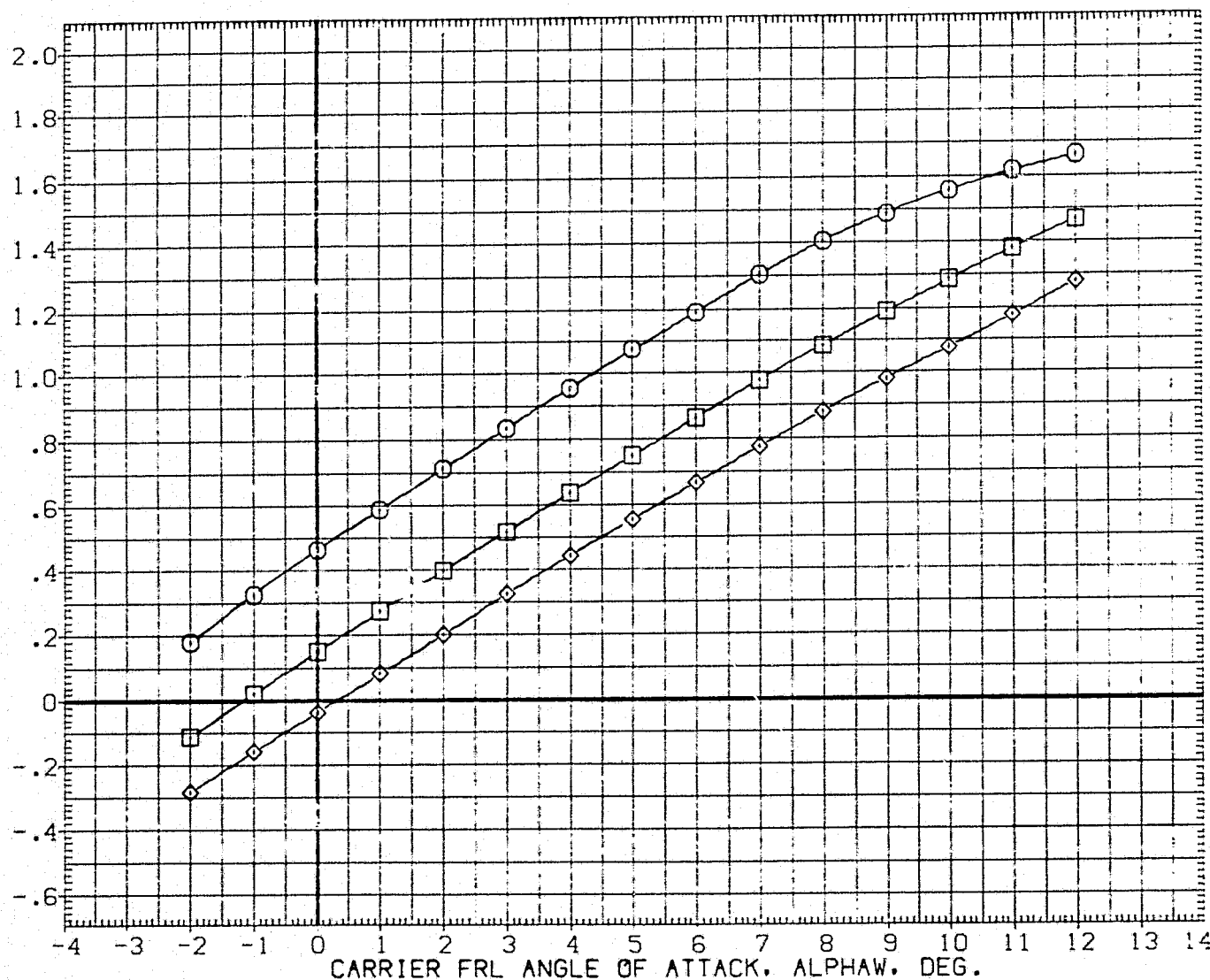


FIG.218 747+ORB(10 DEG),EFFECT OF STD BRAKES OR FULL 45 SPOILERS, FLAPS 20

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(RSM071)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
(RSM070)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	.000	45.000	20.000	LREF	327.8000	IN.
(FGM065)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	45.000	45.000	45.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

LIFT COEFFICIENT, CL

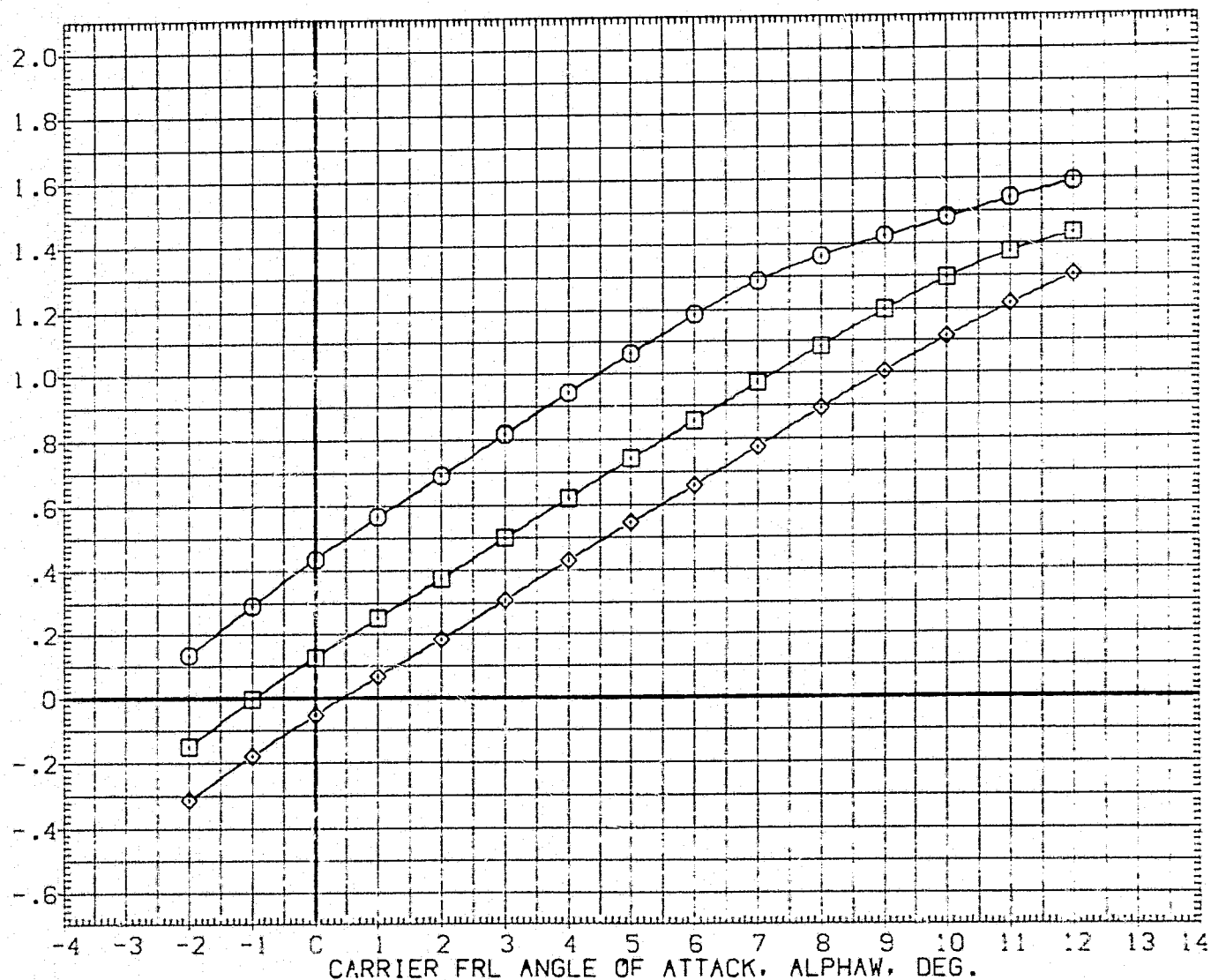


FIG.218 747+ORB(10 DEG),EFFECT OF STD BRAKES OR FULL 45 SPOILERS, FLAPS 20

(C)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM071) CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM071) CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (FGM055) CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

STAB

S1-2

S3-4

S5-6

REFERENCE INFORMATION

SREF 55.000000 50.000000  
 LREF 22.000000 22.000000  
 BREF 22.000000 22.000000  
 XREF 22.000000 22.000000  
 YREF 22.000000 22.000000  
 ZREF 22.000000 22.000000  
 SCALE .03000

LIFT COEFFICIENT, CL

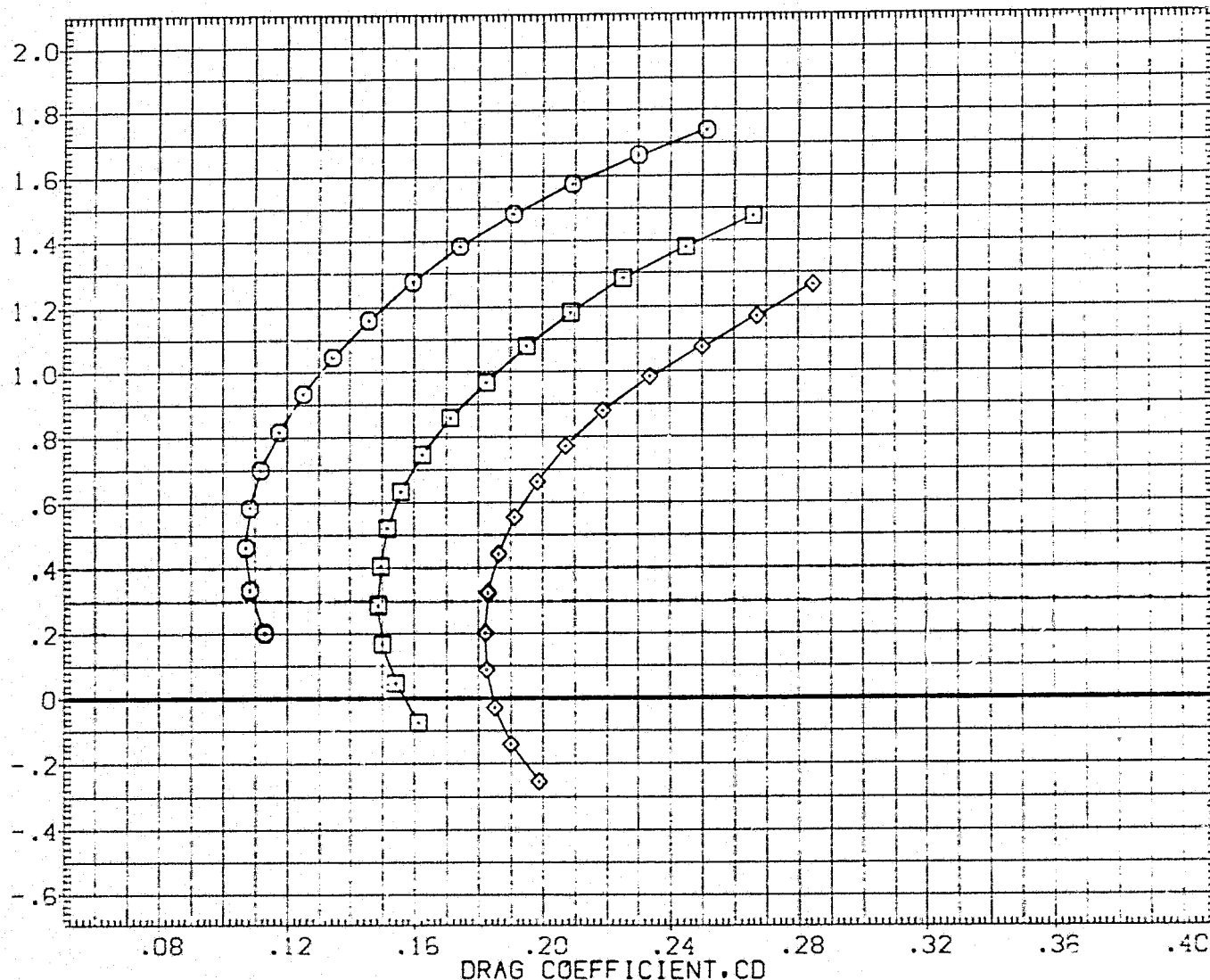


FIG.218 747+ORB(10 DEG),EFFECT OF STD BRAKES OR FULL 45 SPOILERS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
(R3M071)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	.000	.000	.000	SREF	5500.0000 SQ.FT.
(R3M070)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	.000	45.000	20.000	LREF	327.8000 IN.
(F3M065)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	45.000	45.000	45.000	BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

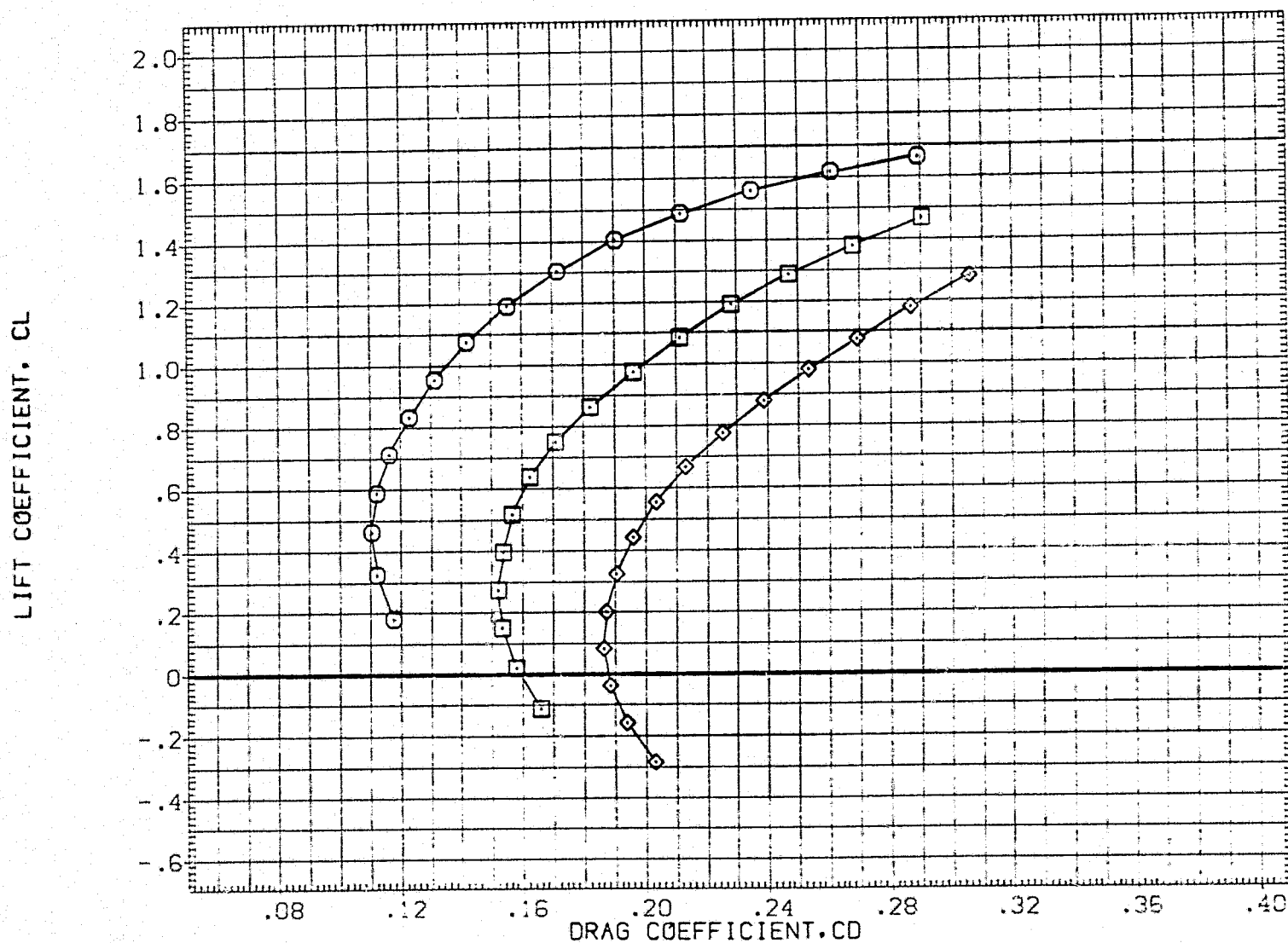


FIG.218 747+ORB(10 DEG),EFFECT OF STD BRAKES OR FULL 45 SPOILERS, FLAPS 20

(B)MACH = .60





DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
(RGM071)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	1.000	.000	.000	.000	SREF	5500.0000 SQ.FT.
(RGM070)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	1.000	.000	45.000	20.000	LREF	327.8000 IN.
(FGM065)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	1.000	45.000	45.000	45.000	BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

LIFT COEFFICIENT, CL

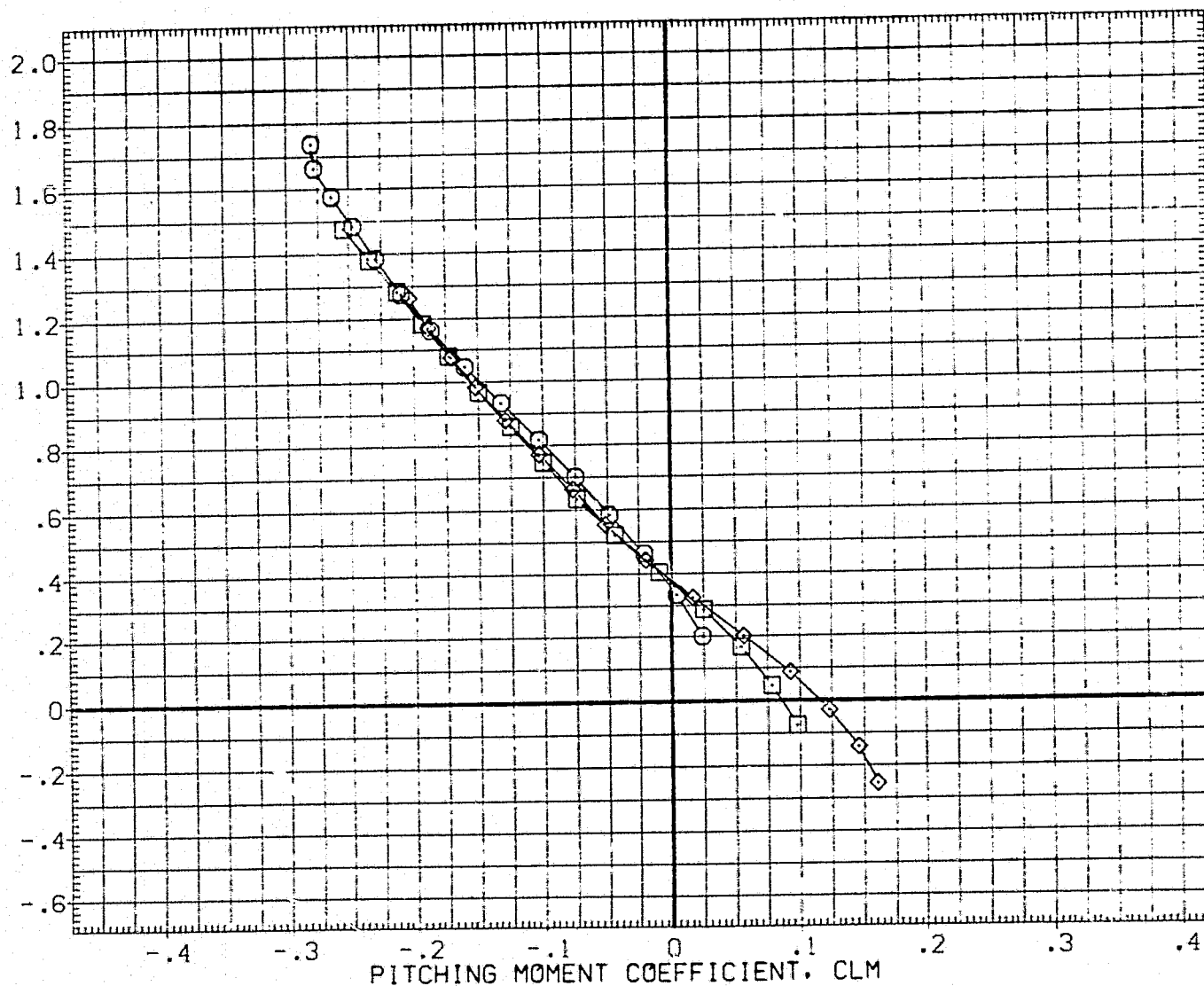


FIG.218 747+ORB(10 DEG),EFFECT OF STD BRAKES OR FULL 45 SPOILERS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(R6M071)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
(R6M070)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	.000	.000	.000	LREF	327.8000	IN.
(F6M065)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	45.000	45.000	45.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

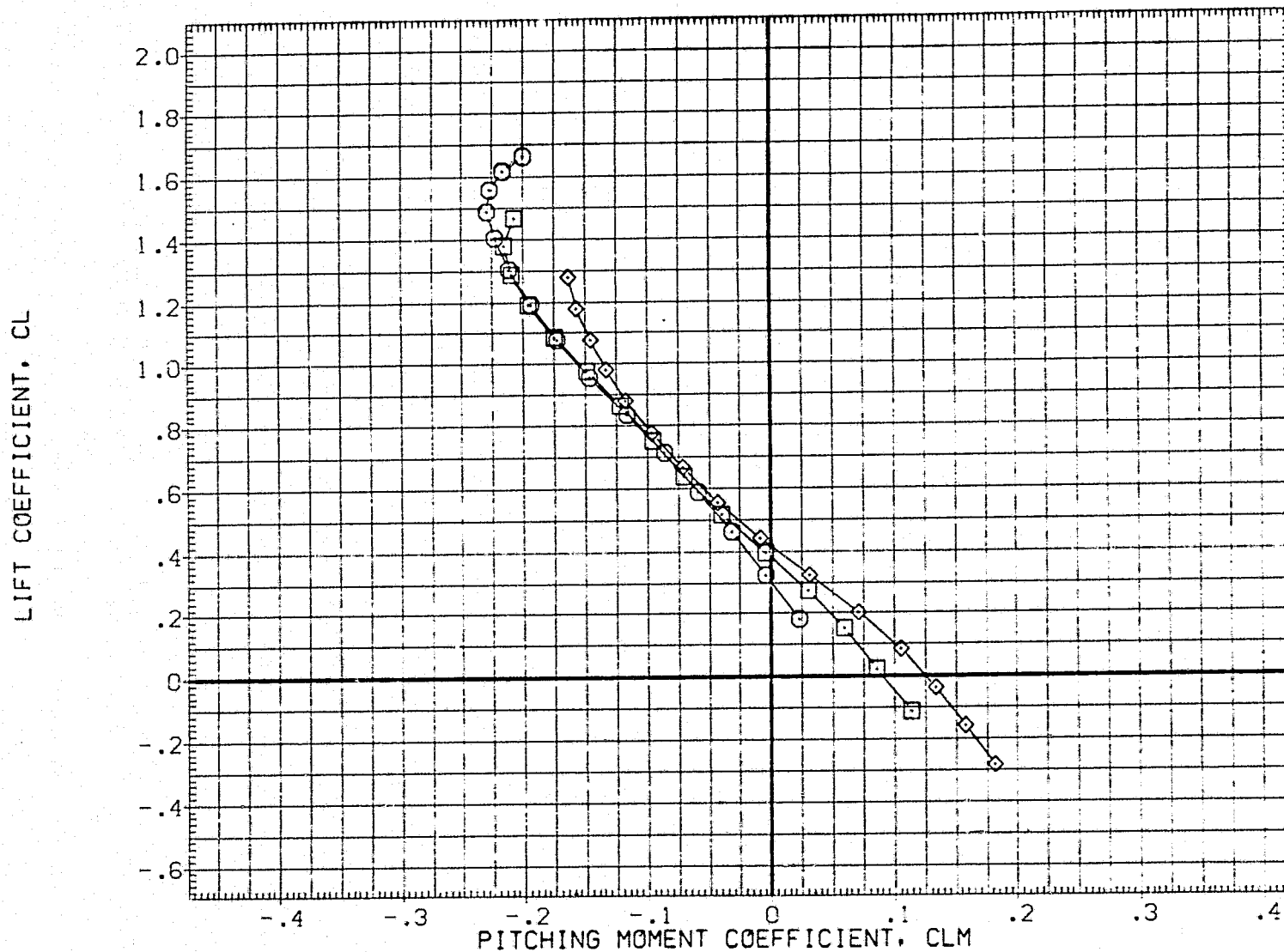


FIG.218 747+ORB(10 DEG),EFFECT OF STD BRAKES OR FULL 45 SPOILERS, FLAPS 20

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(R3M071)  $\square$  CAS KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (R3M070)  $\square$  CAS KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (F3M065)  $\diamond$  CAS KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

STAB S1-2 S3-4 S5-6  
 1.000 .000 .000 .000  
 1.000 .000 45.000 20.000  
 1.000 45.000 45.000 45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

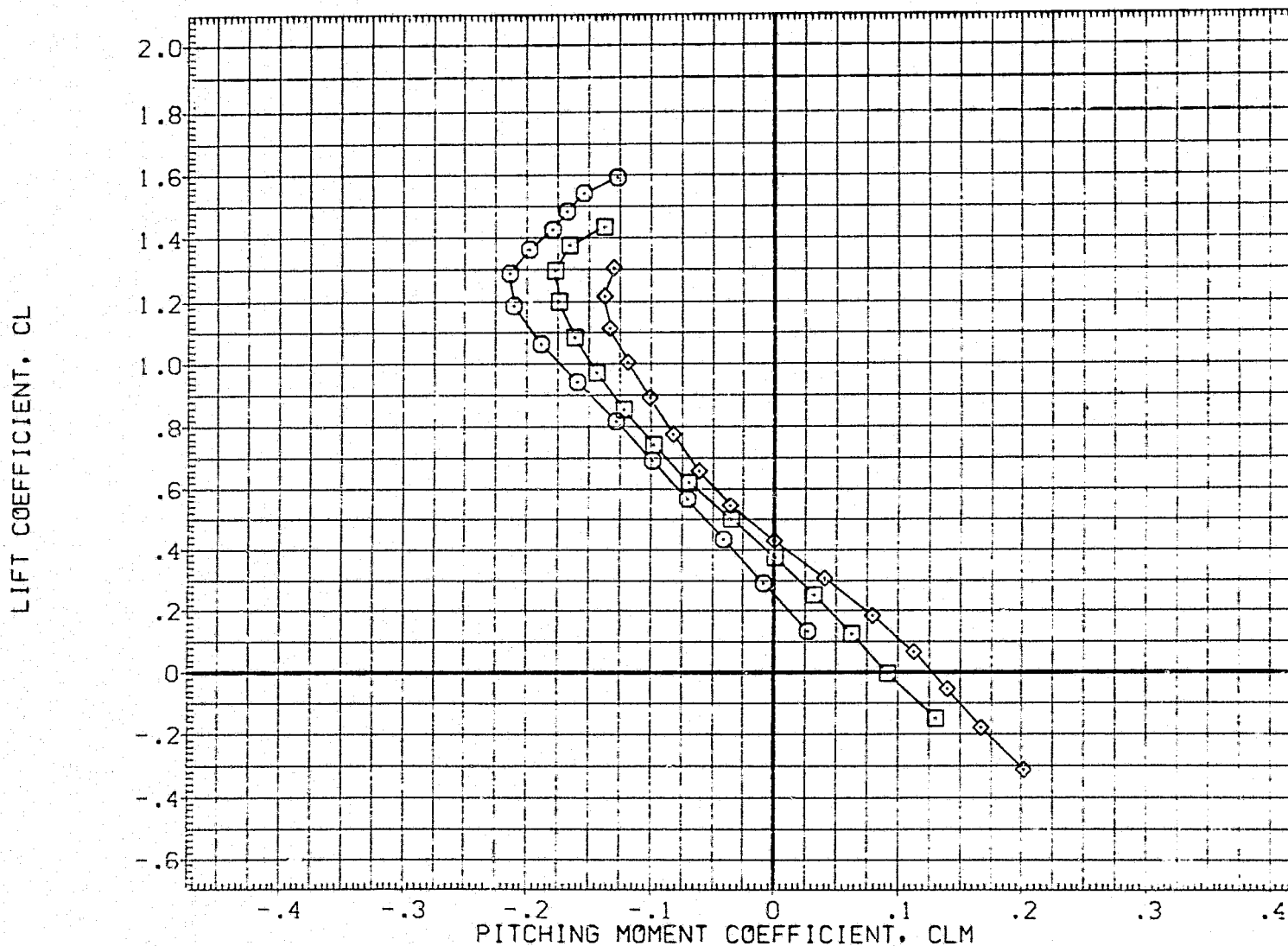


FIG.218 747+ORB(10 DEG),EFFECT OF STD BRAKES OR FULL 45 SPOILERS, FLAPS 20

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
(R1M071)	○ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	.000	.000	.000	SREF	5500.0000 SQ.FT.
(R6M070)	□ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	.000	45.000	20.000	LREF	327.8000 IN.
(F9M065)	◇ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	45.000	45.000	45.000	BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

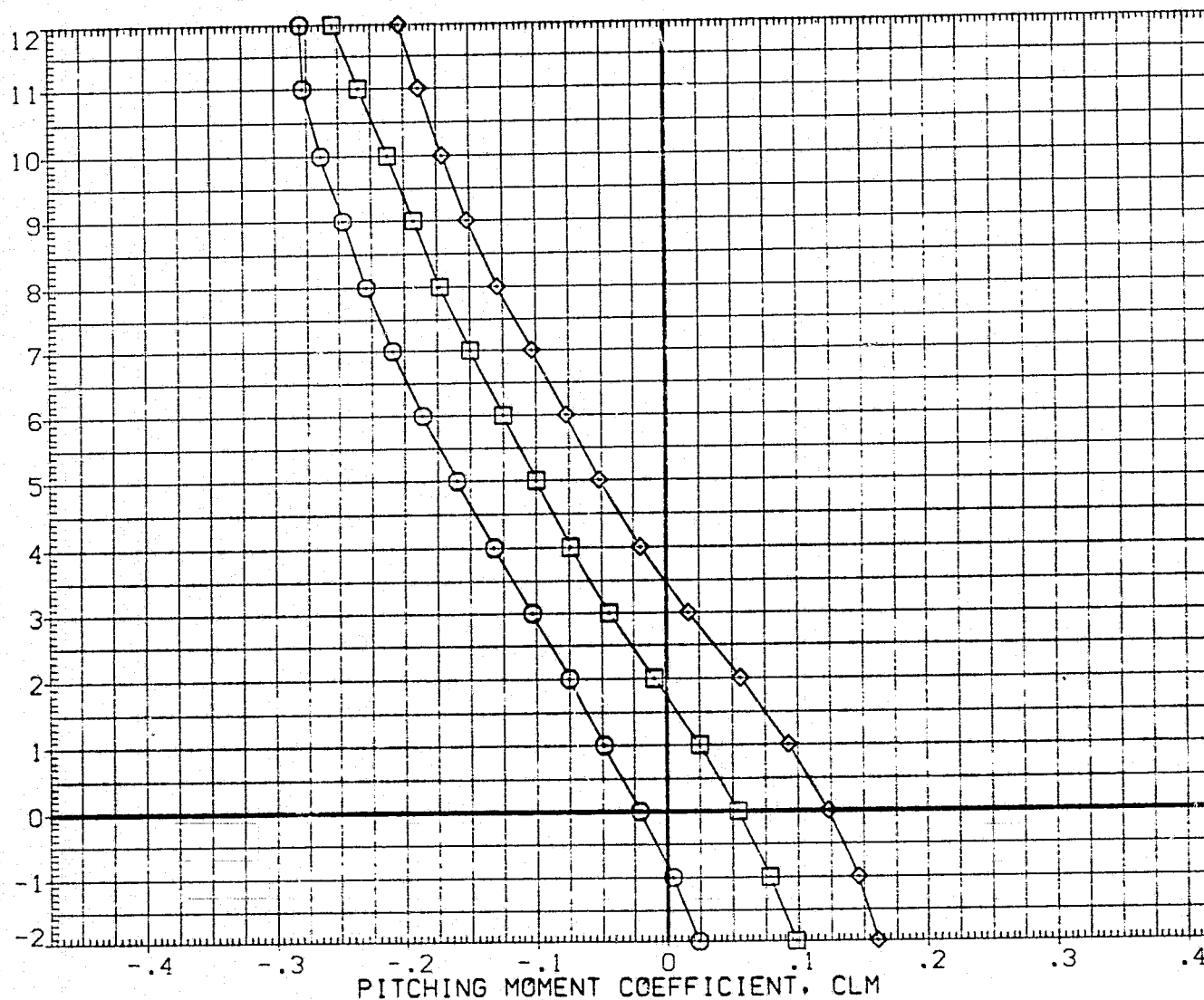


FIG.218 747+ORB(10 DEG),EFFECT OF STD BRAKES OR FULL 45 SPOILERS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(RGM071)	CA5 K1 F27 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
(RGM070)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	.000	45.000	20.000	LREF	327.8000	IN.
(FGM065)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	45.000	45.000	45.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.



FIG.218 747+ORB(10 DEG),EFFECT OF STD BRAKES OR FULL 45 SPOILERS, FLAPS 20

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(RGM071)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	.000	.000	.000	SREF	5500.0000	50. FT.
(RGM070)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	.000	.000	.000	LREF	327.8000	IN.
(RGM065)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	45.000	45.000	45.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN.
						YMRP	.0000	IN.
						ZMRP	190.7500	IN.
						SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

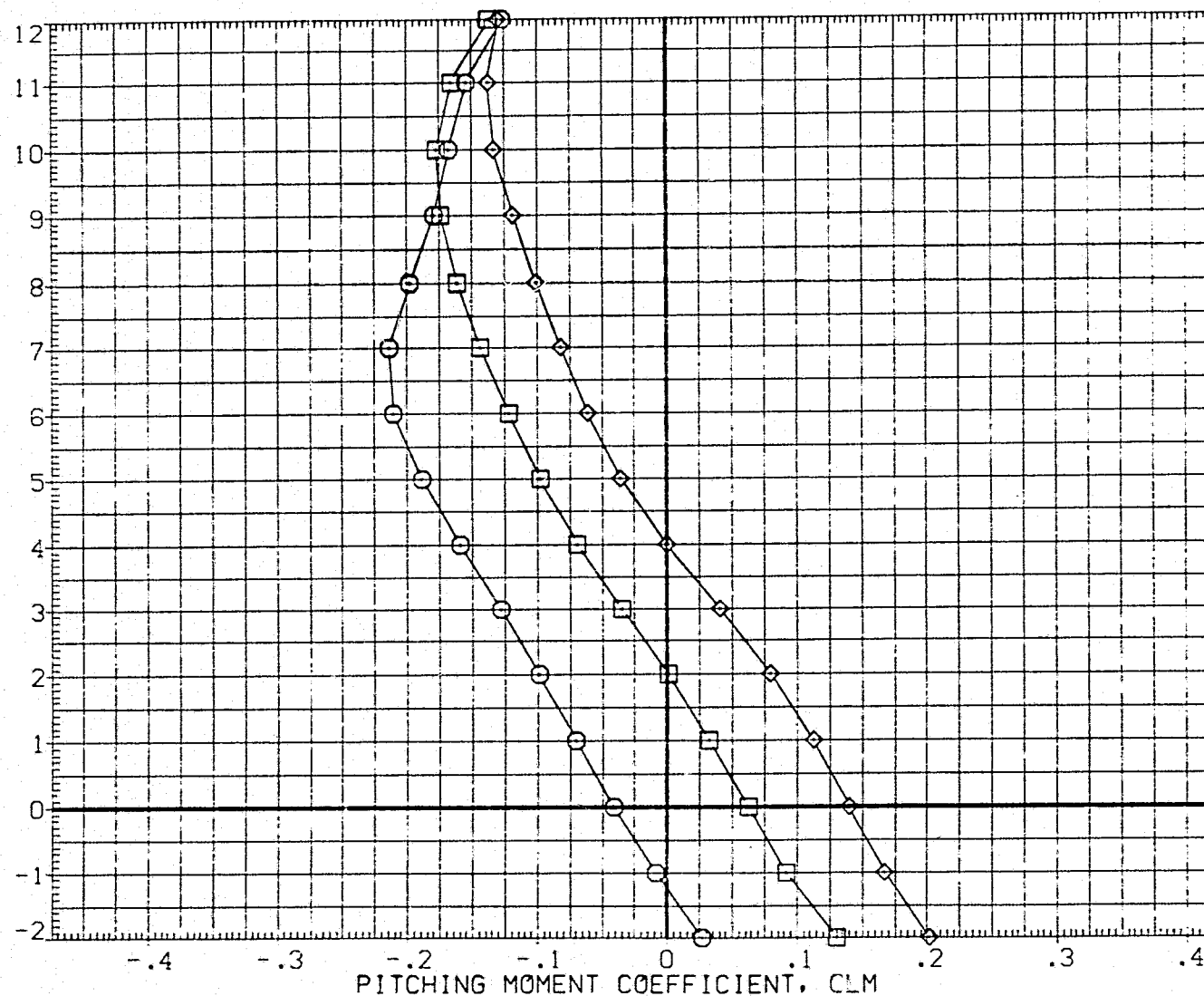


FIG.218 747+ORB(10 DEG),EFFECT OF STD BRAKES OR FULL 45 SPOILERS, FLAPS 20  
(C)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM116)  $\bigcirc$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM090)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB 10RB S5-6  
 1.000 4.000 .000  
 1.000 7.850 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. X5  
 YMRP .0000 IN. Y5  
 ZMRP 190.7500 IN. Z5  
 SCALE .0300

LIFT COEFFICIENT, CL

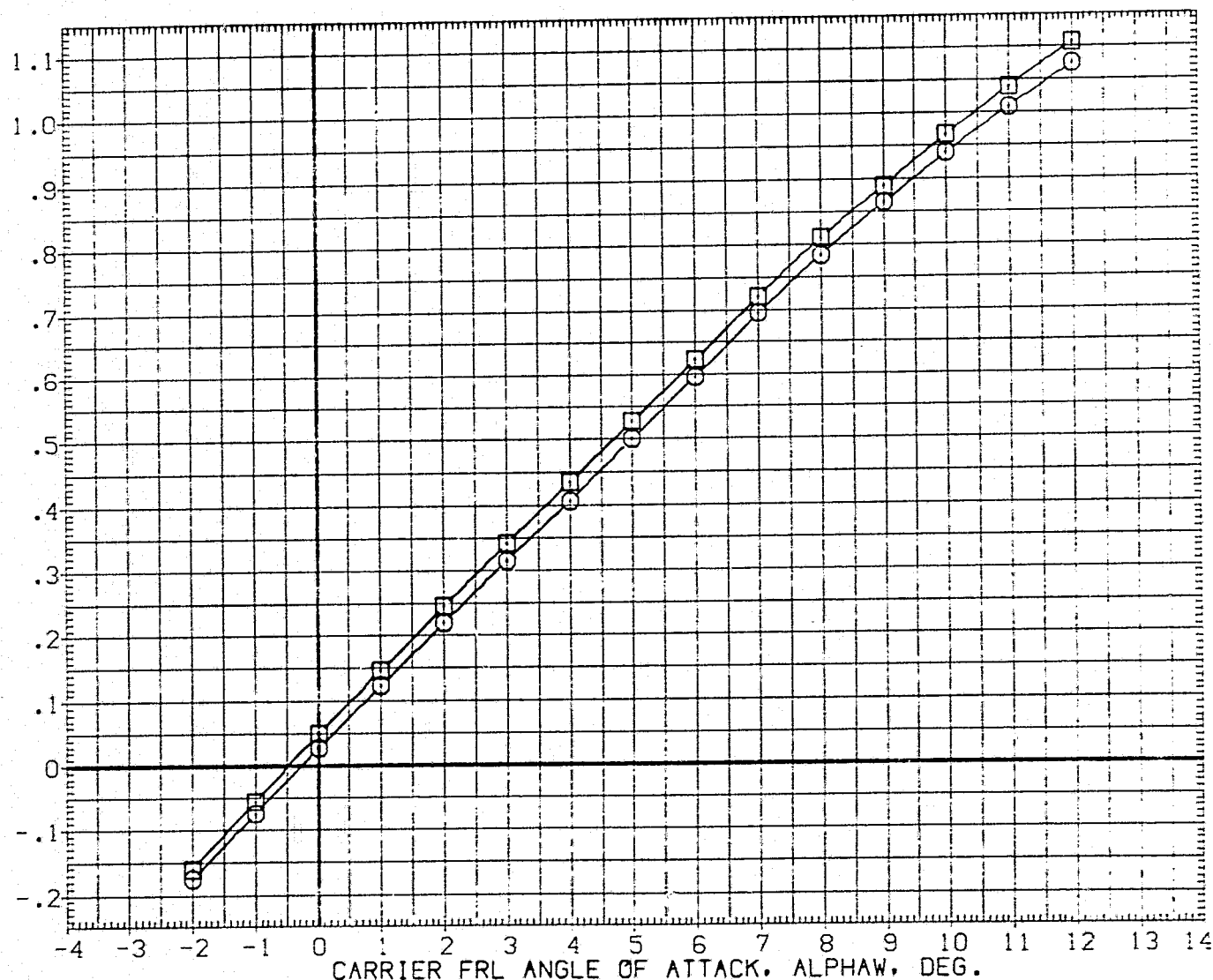


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RSM116)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )  
 (RSM090)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

STAB 10RB S5-6  
 1.000 4.000 .000  
 1.000 7.850 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 CLREF 327.8000 IN.  
 BRREF 2348.0000 IN.  
 XREF 1339.9100 IN.  
 YREF 10000 IN.  
 ZREF 190.7500 IN.  
 SCALE .0300

LIFT COEFFICIENT, CL

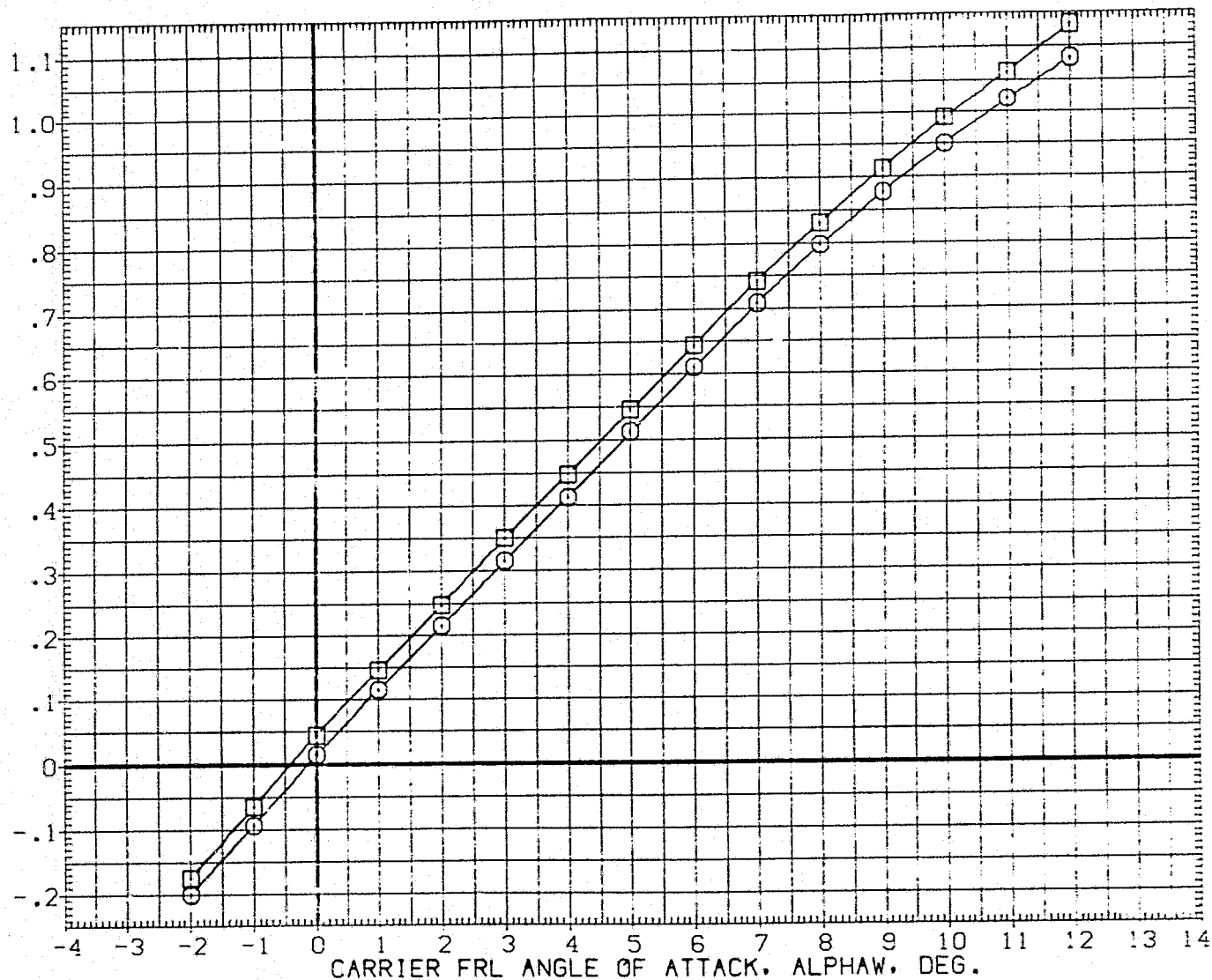


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(B)MACH = .50



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM116)  $\bigcirc$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM090)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

IORB

SS-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

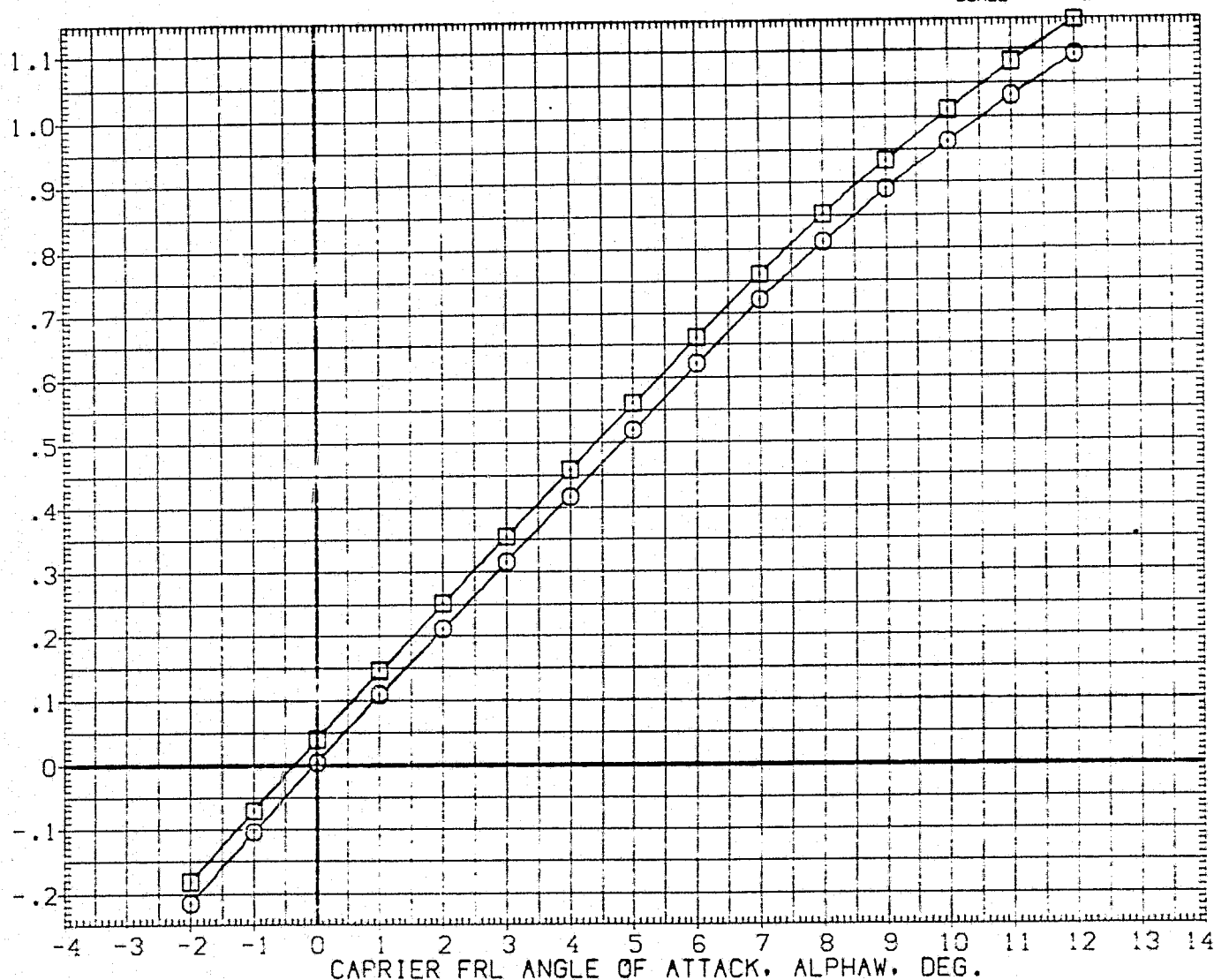


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION		
(RSM116)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	1.000	4.000	.000	SREF	5500.0000	50.FT.
(RSM090)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	7.850	.000	LREF	327.8000	IN.
					BREF	2348.0000	IN.
					XMRB	1339.9100	IN. XC
					YMRB	.0000	IN. YC
					ZMRB	190.7500	IN. ZC
					SCALE	.0300	

LIFT COEFFICIENT, CL

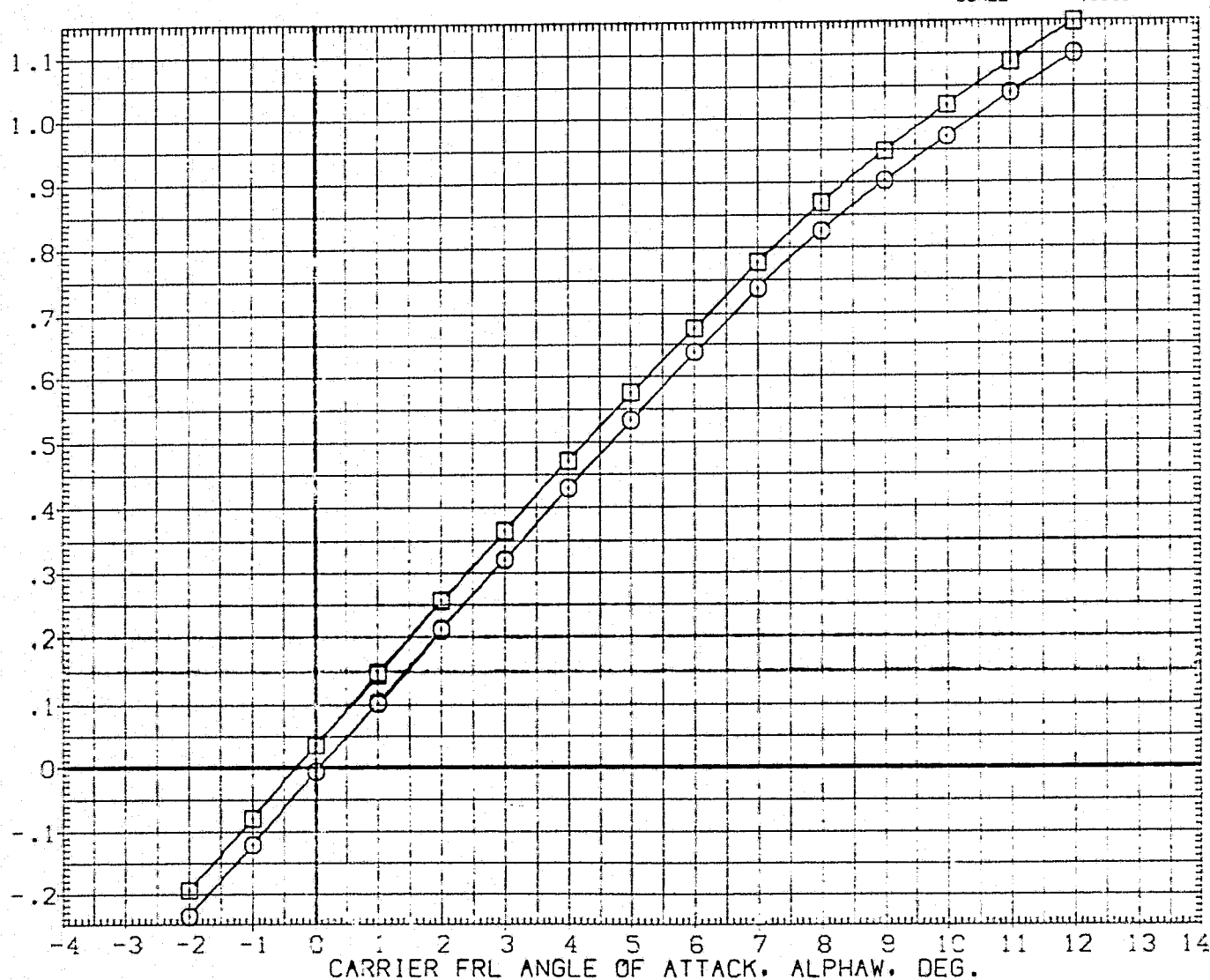


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(RBM116)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	1.000	4.000	.000
(RBM090)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	7.850	.000

REFERENCE INFORMATION

SREF	5500.0000	50. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. XC
ZMRP	190.7500	IN. XC
SCALE	.0300	

LIFT COEFFICIENT, CL

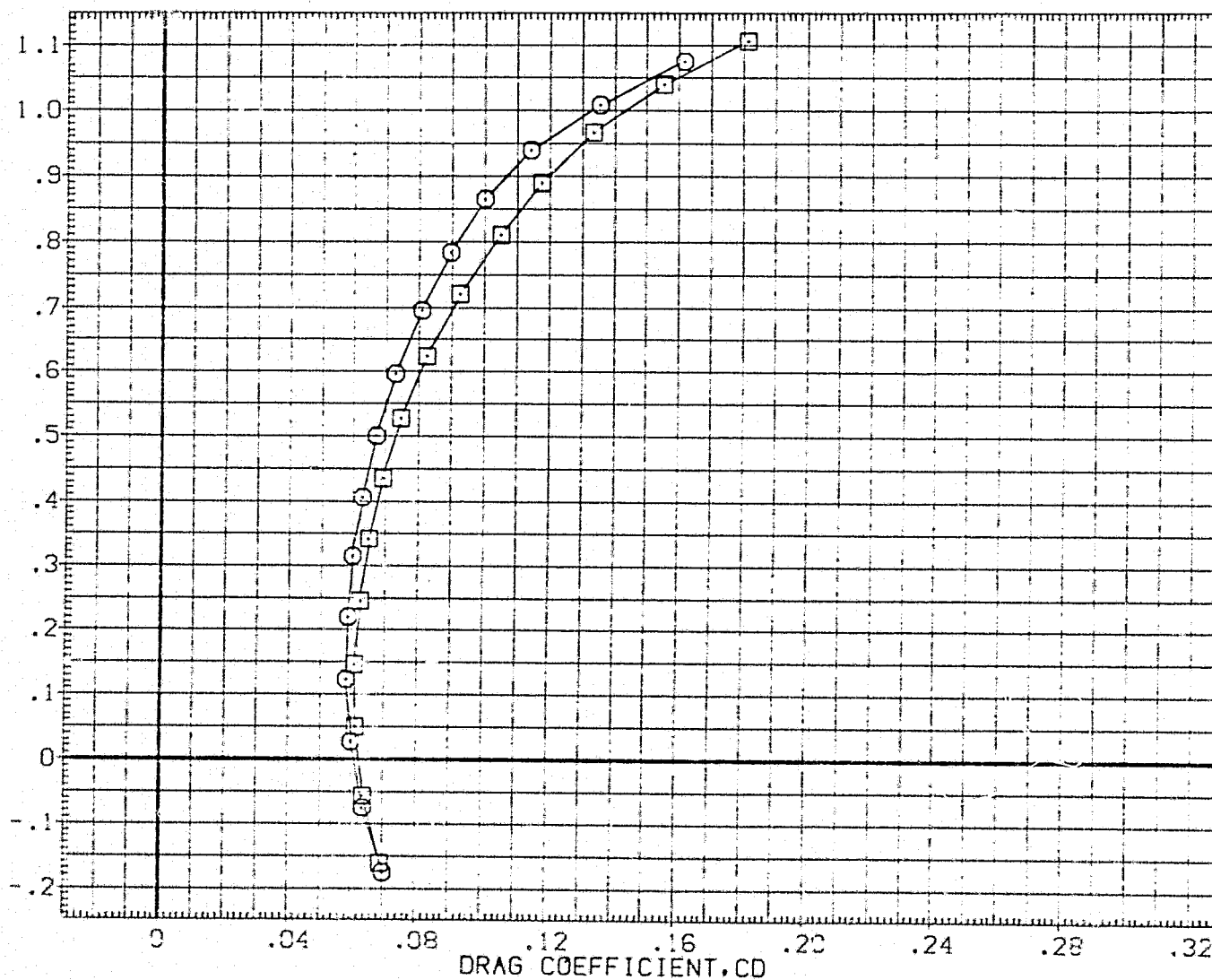


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION	
(RSM116)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	1.000	4.000	.000	SREF	5500.0000 SQ.FT.
(RSM090)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	7.850	.000	LREF	327.8000 IN.
					BREF	2348.0000 IN.
					XMRF	1339.9100 IN. XC
					YMRF	.0000 IN. YC
					ZMRF	190.7500 IN. ZC
					SCALE	.0300

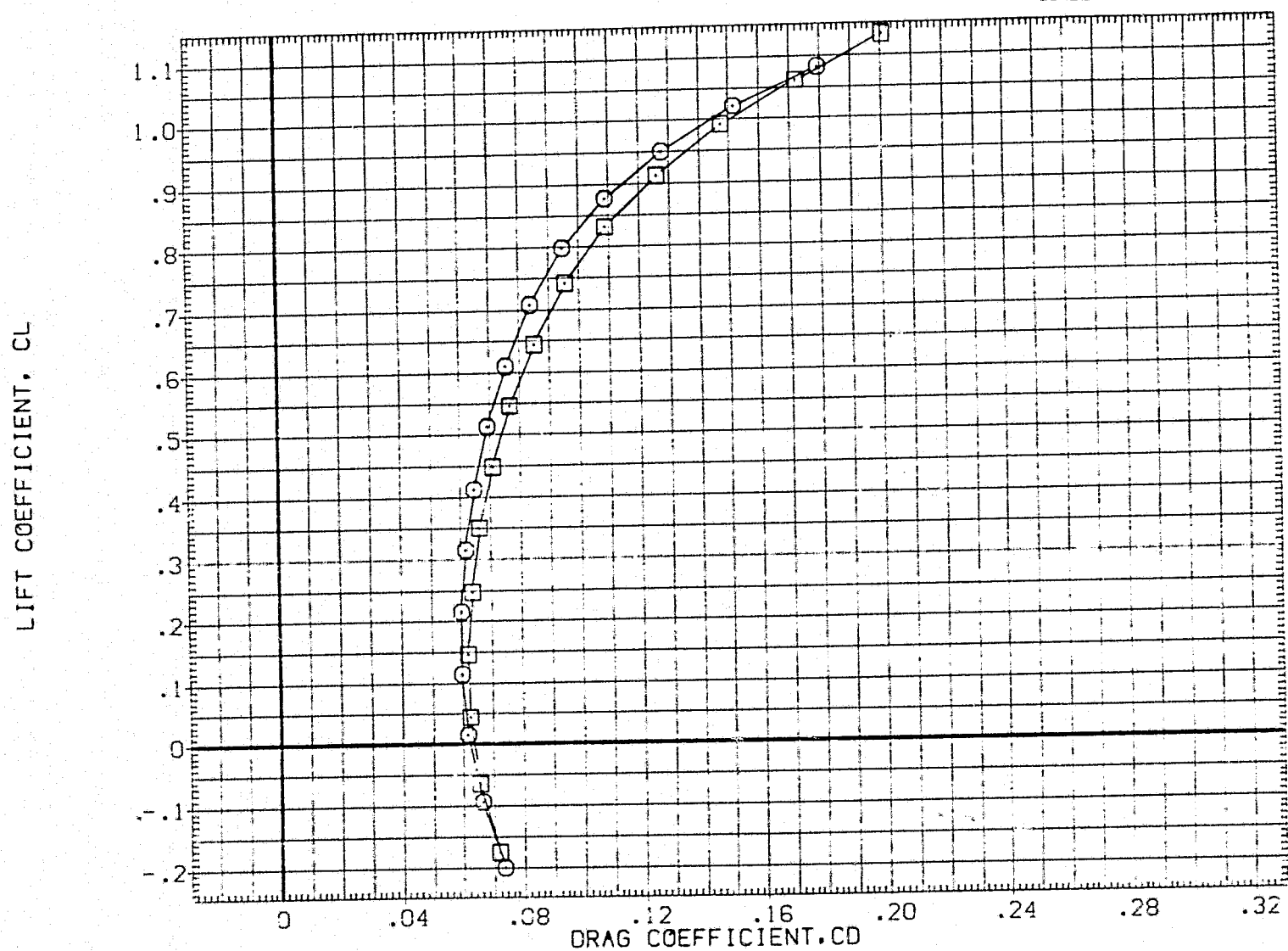


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM116) ○	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM090) □	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB	IORB	SS-6
1.000	4.000	.000
1.000	7.850	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

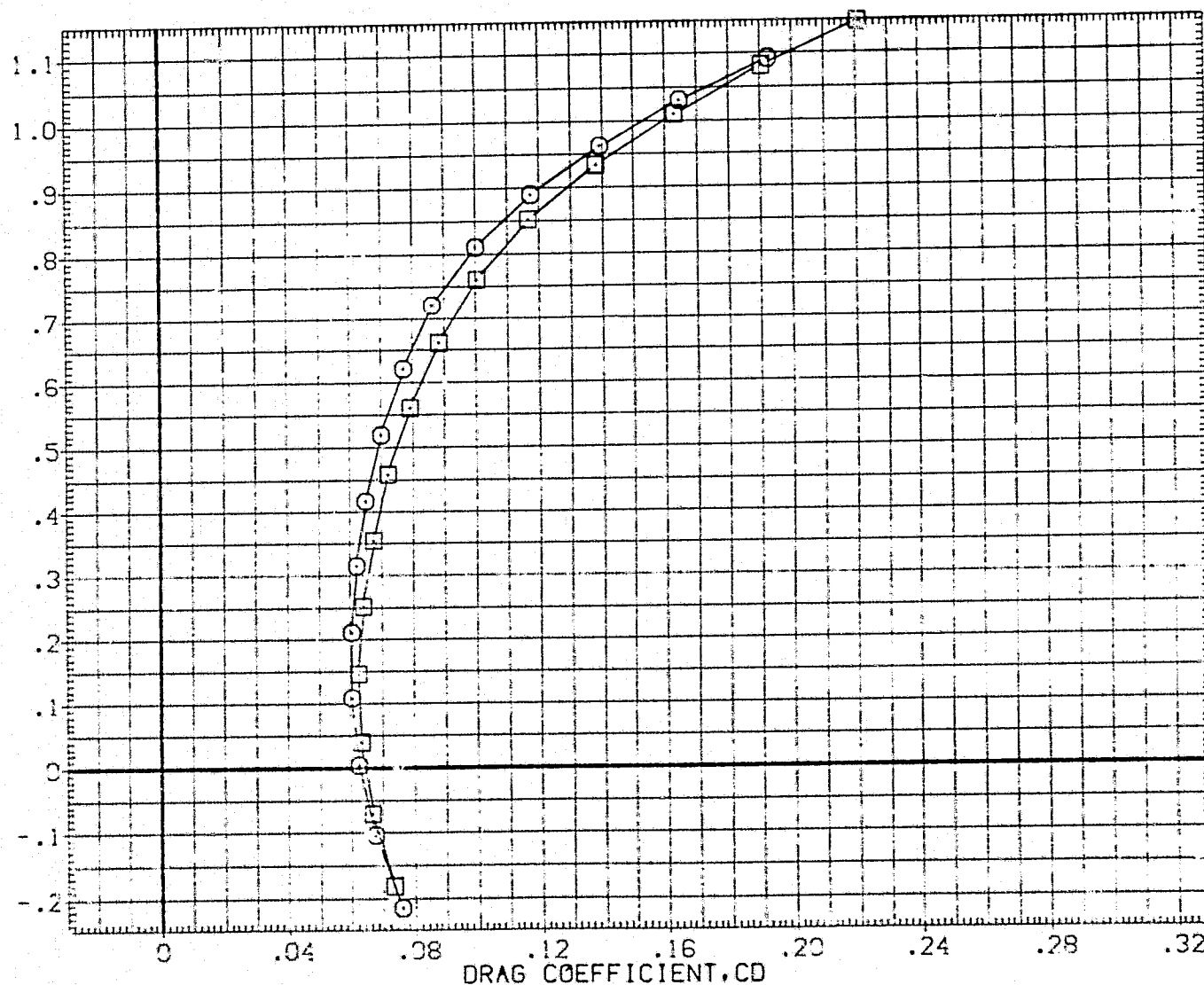


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(R3M116)	○ CAS K1 FD H15.6 V9.1 (PLUS. CRB TC5 AT38.3 )
(R3M090)	□ CAS K1 FD H15.6 V9.1 (PLUS. CRB TC5 AT38.2 )

STAB	ICRB	S5-6
1.000	4.000	.000
1.000	7.850	.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
CRB	327.8000
SREF	2348.0000
ICRB	1339.9100
ICRB	.0000
ZMRP	190.7500
SCALE	.0300

LIFT COEFFICIENT, CL

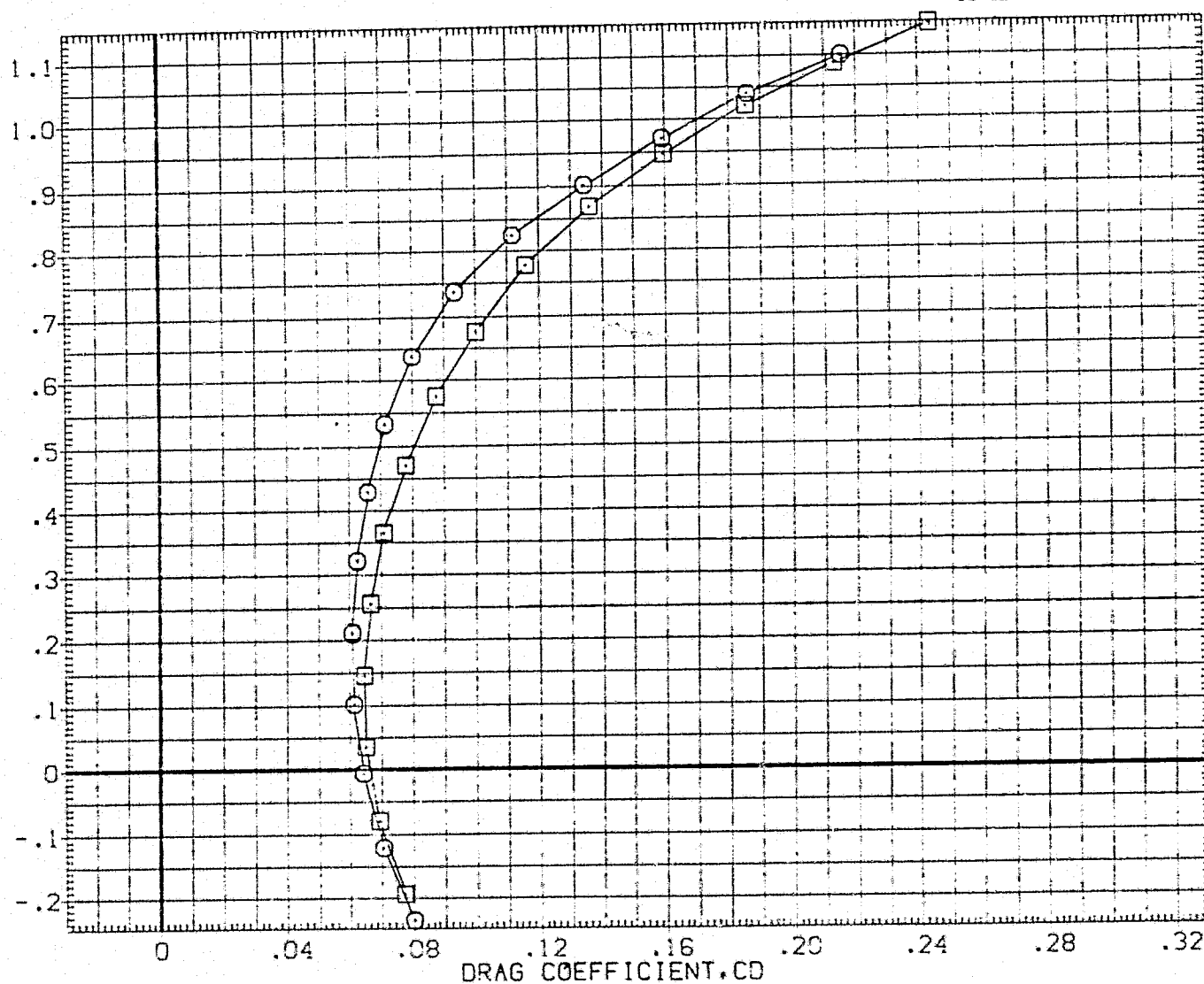


FIG.219 747+CRB, EFFECT OF CRB INCIDENCE, FLAPS UP FERRY CONFIGURATION  
(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION	
(RGM116)	○ CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	1.000	4.000	.000	SREF	5500.0000 SQ.FT.
(RGM090)	□ CAS KI FO H15.6 VS.1 (PLUS. ORB TCS AT38.2)	1.000	7.850	.000	LREF	327.8000 IN.
					BREF	2349.0000 IN.
					XMR0	1339.9100 IN. XC
					YMR0	.0000 IN. YC
					ZMR0	190.7500 IN. ZC
					SCALE	.0300

LIFT COEFFICIENT, CL

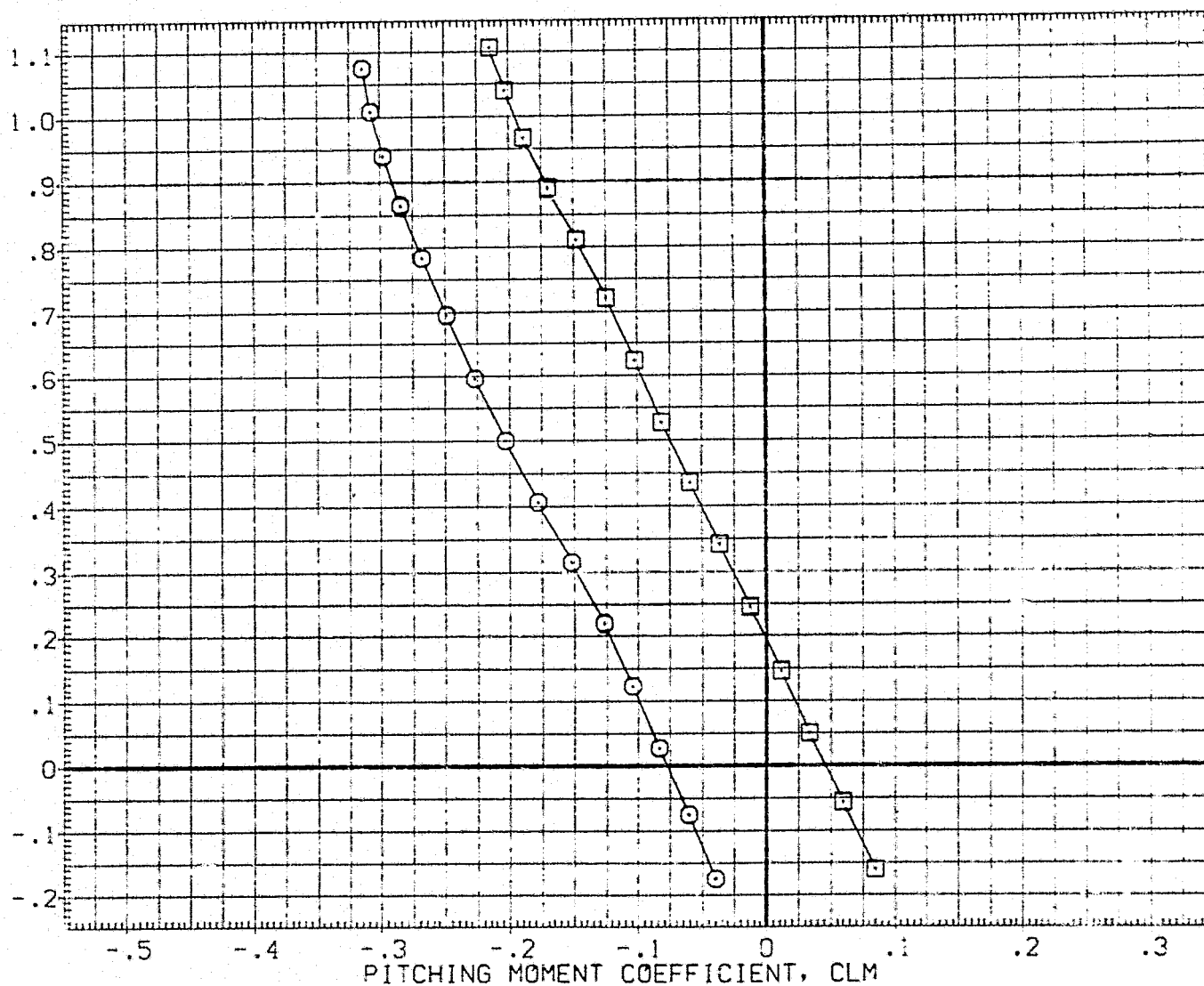


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RUM116)  $\bigcirc$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RUM090)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

1.000

IORB

4.000  
7.850

SS-S

.000  
.000

REFERENCE INFORMATION

SREF 5500.0000 50.0 FT.  
 LREF 327.8000 32.8 FT.  
 BREF 2349.0000 23.5 FT.  
 XMRP 1339.9100 13.4 FT.  
 YMRP 1000.0000 10.0 FT.  
 ZMRP 192.7500 19.3 FT.  
 SCALE .0300

LIFT COEFFICIENT, CL

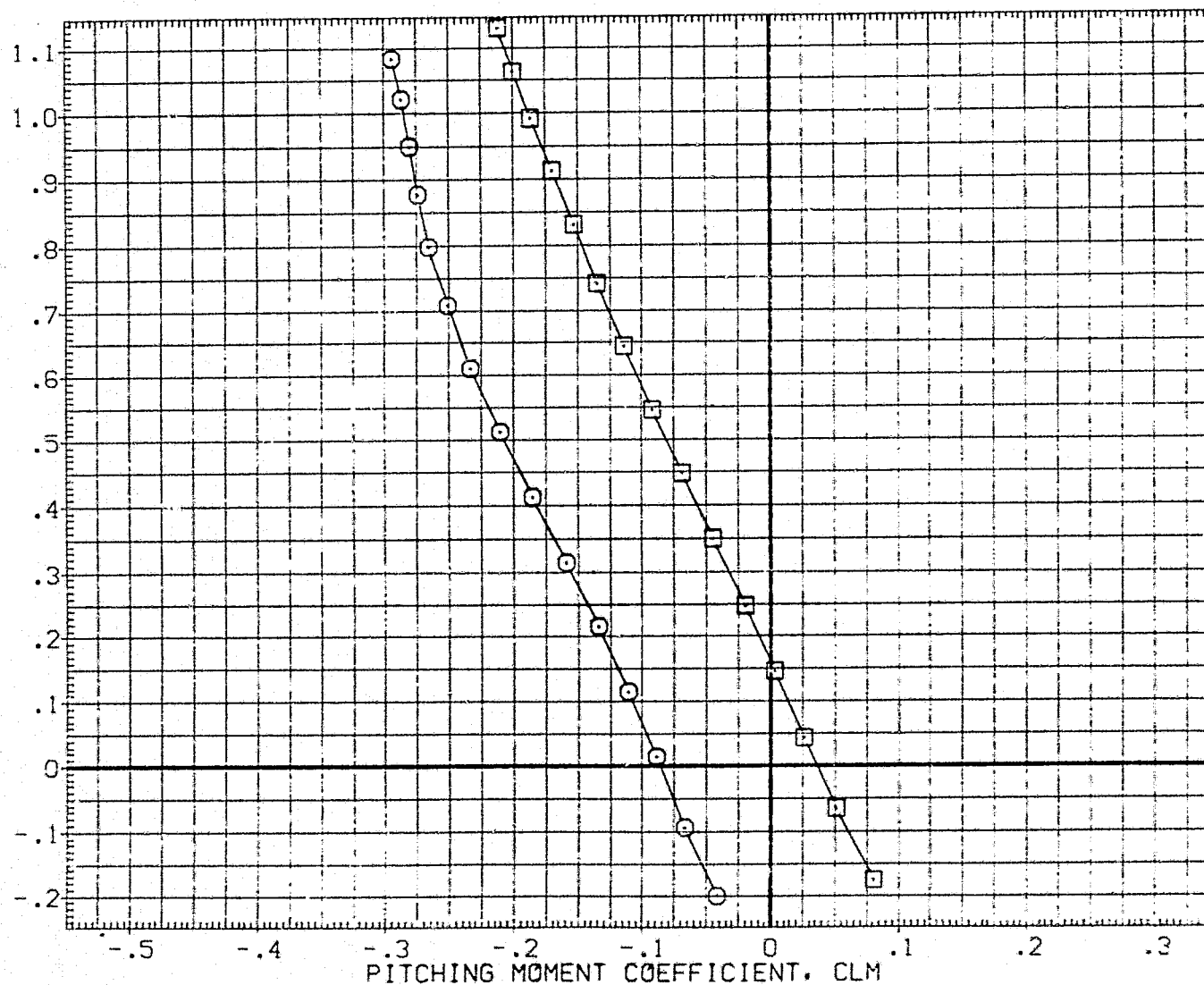


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(B)MACH = .50

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM116)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM090)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB 10RB S5-6  
 1.000 4.000 .000  
 1.000 7.850 .000

REFERENCE INFORMATION

SREF 5500.0000 SG.F.  
 LREF 327.8000  
 BREF 2348.0000  
 XMRP 1339.9100  
 YMRP .0000  
 ZMRP 190.7500  
 SCALE .0300

LIFT COEFFICIENT, CL

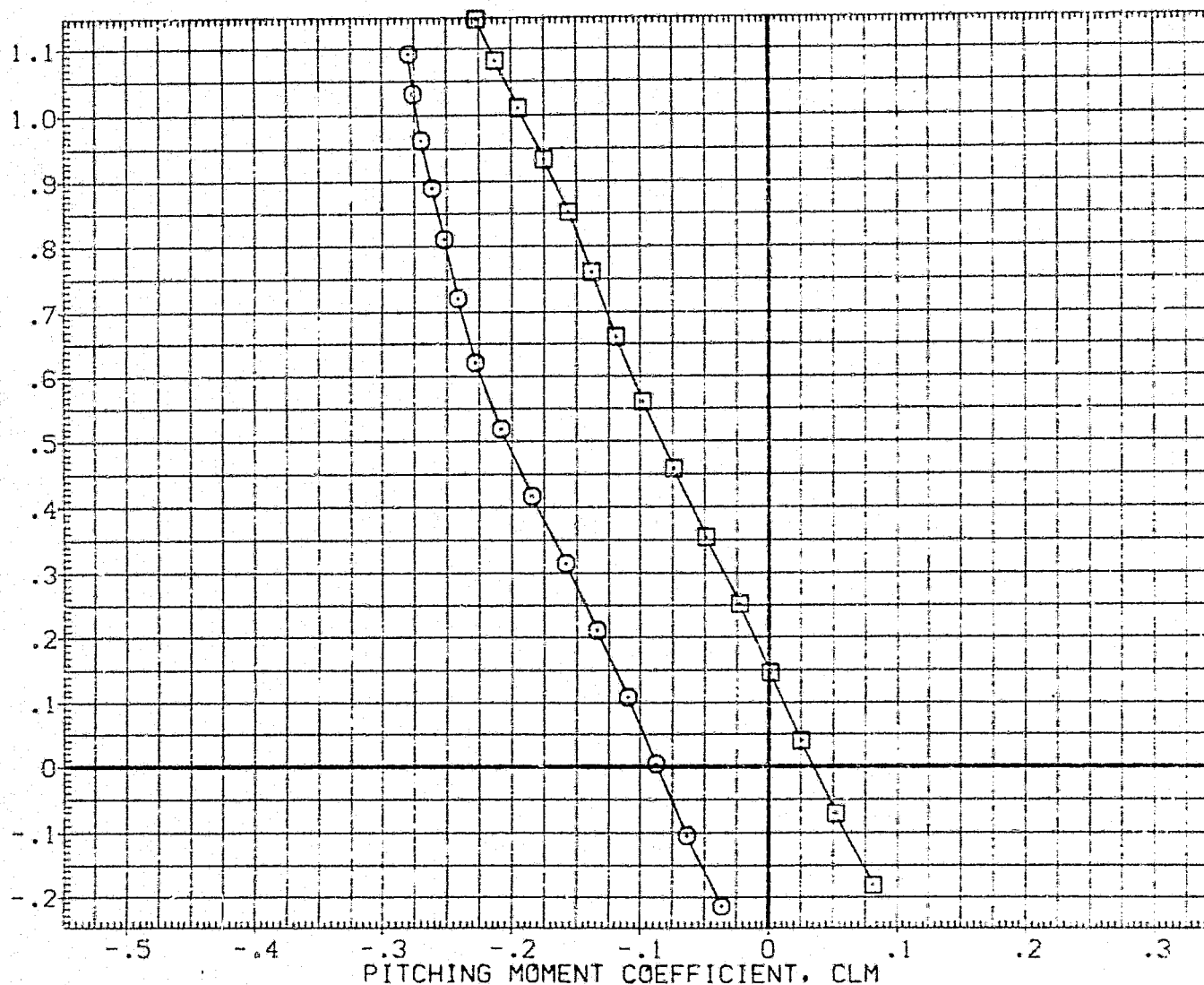


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM116)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM090)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. 3RB TC5 AT38.2 )

STAB

1.000  
 1.000

IORB

4.000  
 7.850

SS-6

.000  
 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

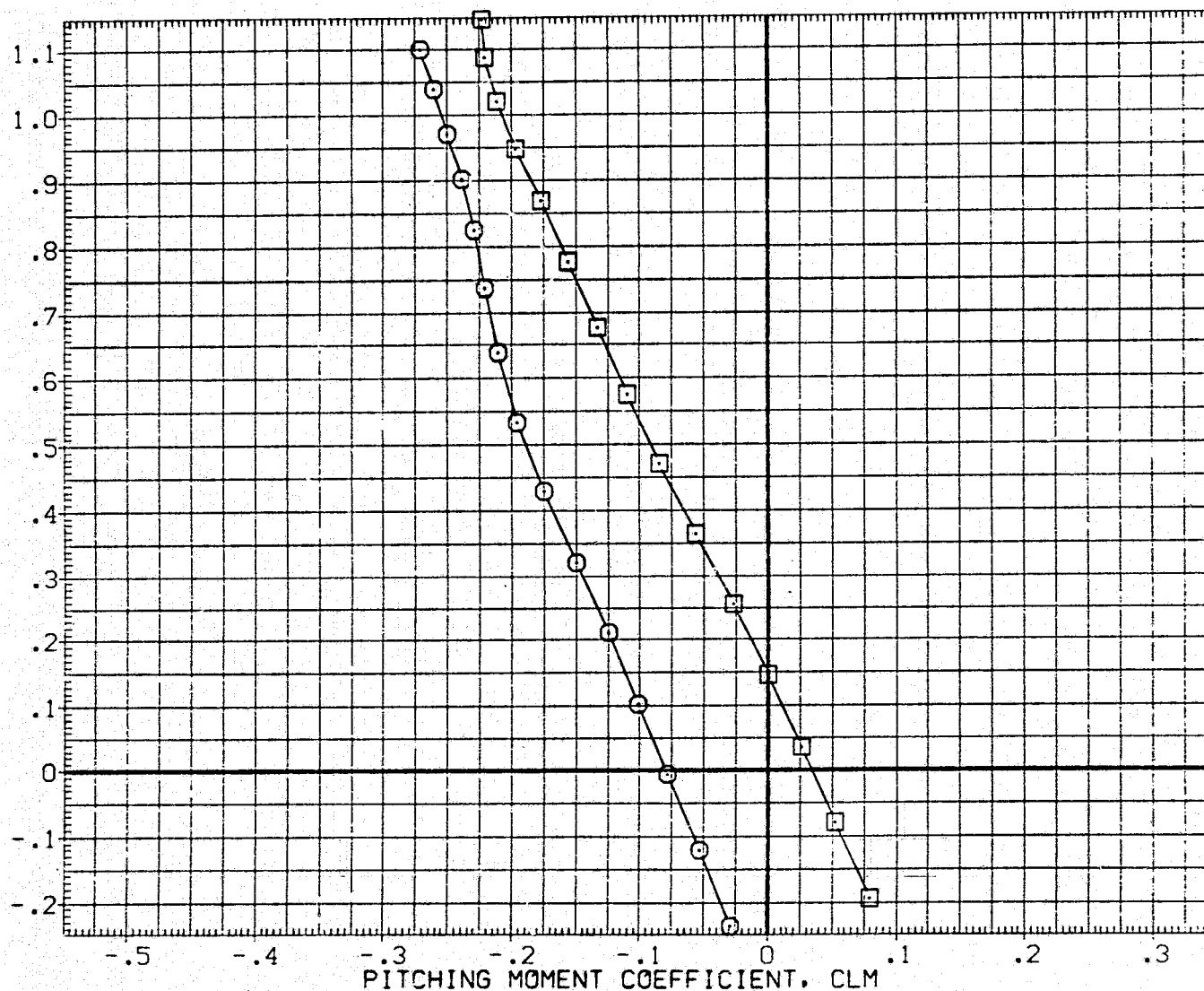


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(D)MACH = .70

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM116)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)
(RGM090)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)

STAB	IORB	S5-6
1.000	4.000	.000
1.000	7.850	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRF	1339.9100	IN. XC
YMRF	.0000	IN. YC
ZMRF	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

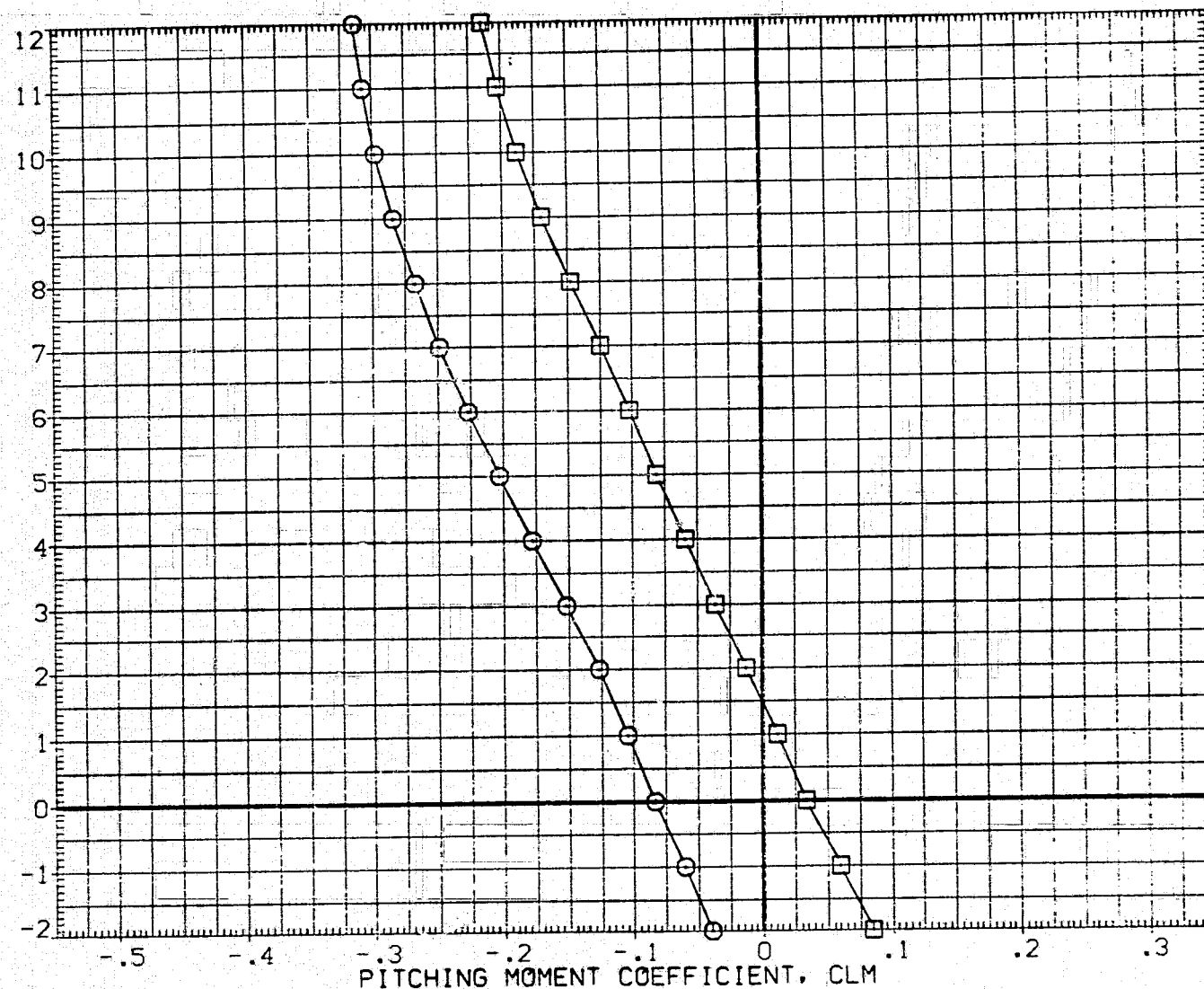


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RSM116)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )  
 (RSM090)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

STAB 10RB 55-6  
 1.000 4.000 .000  
 1.000 7.850 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHAW, DEG.

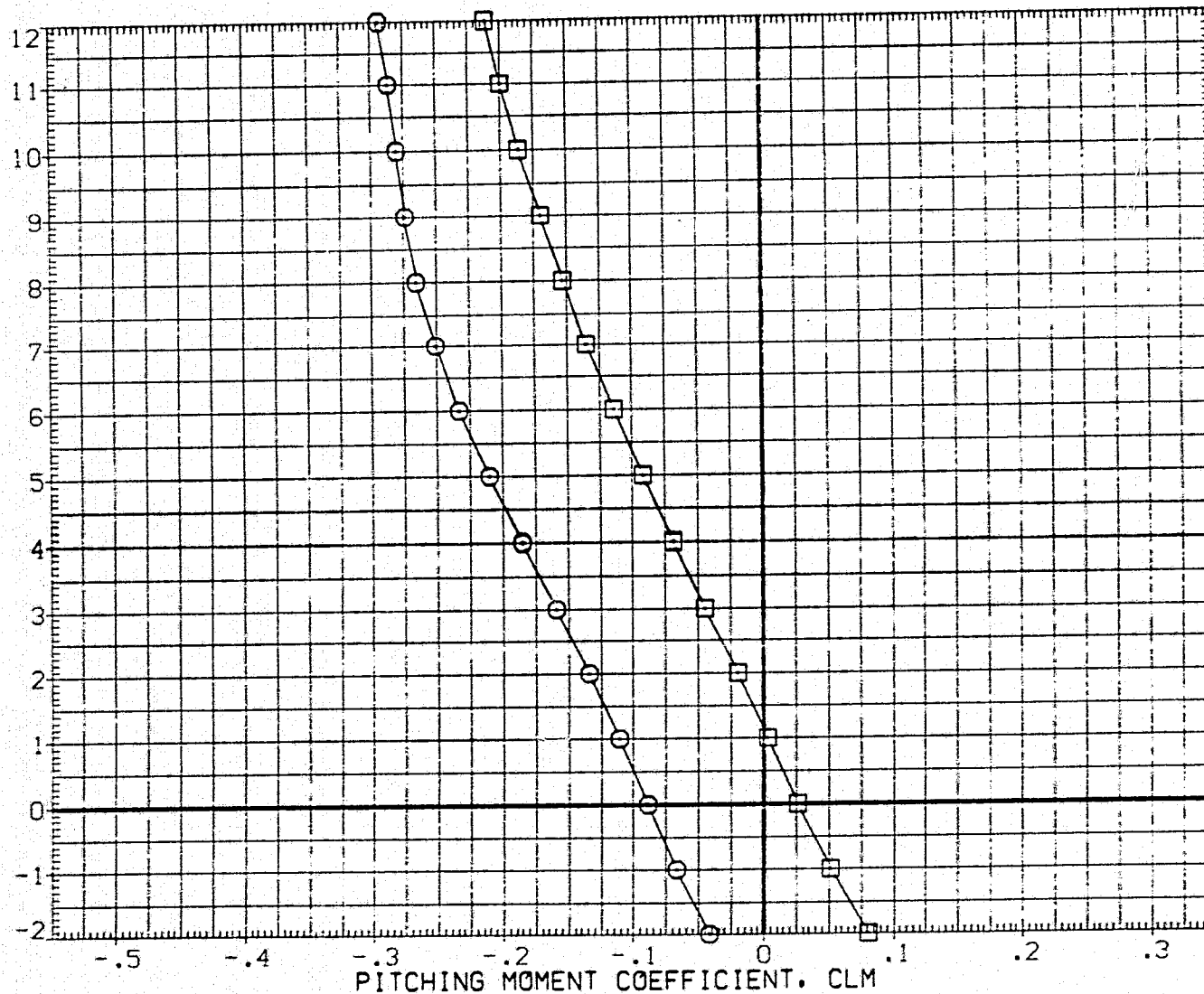


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(B)MACH = .50

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (RGM116)     $\square$     CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM090)     $\square$     CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

STAB    10RB    S5-6  
 1.000    4.000    .000  
 1.000    7.850    .000

REFERENCE INFORMATION  
 SREF    5500.0000    SQ.FT.  
 LREF    327.8000    IN.  
 BREF    2348.0000    IN.  
 XMRP    1339.9100    IN. XC  
 YMRP    .0000    IN. YC  
 ZMRP    190.7500    IN. ZC  
 SCALE    .0300

CARRIER FRL ANGLE OF ATTACK. ALPHAW. DEG.

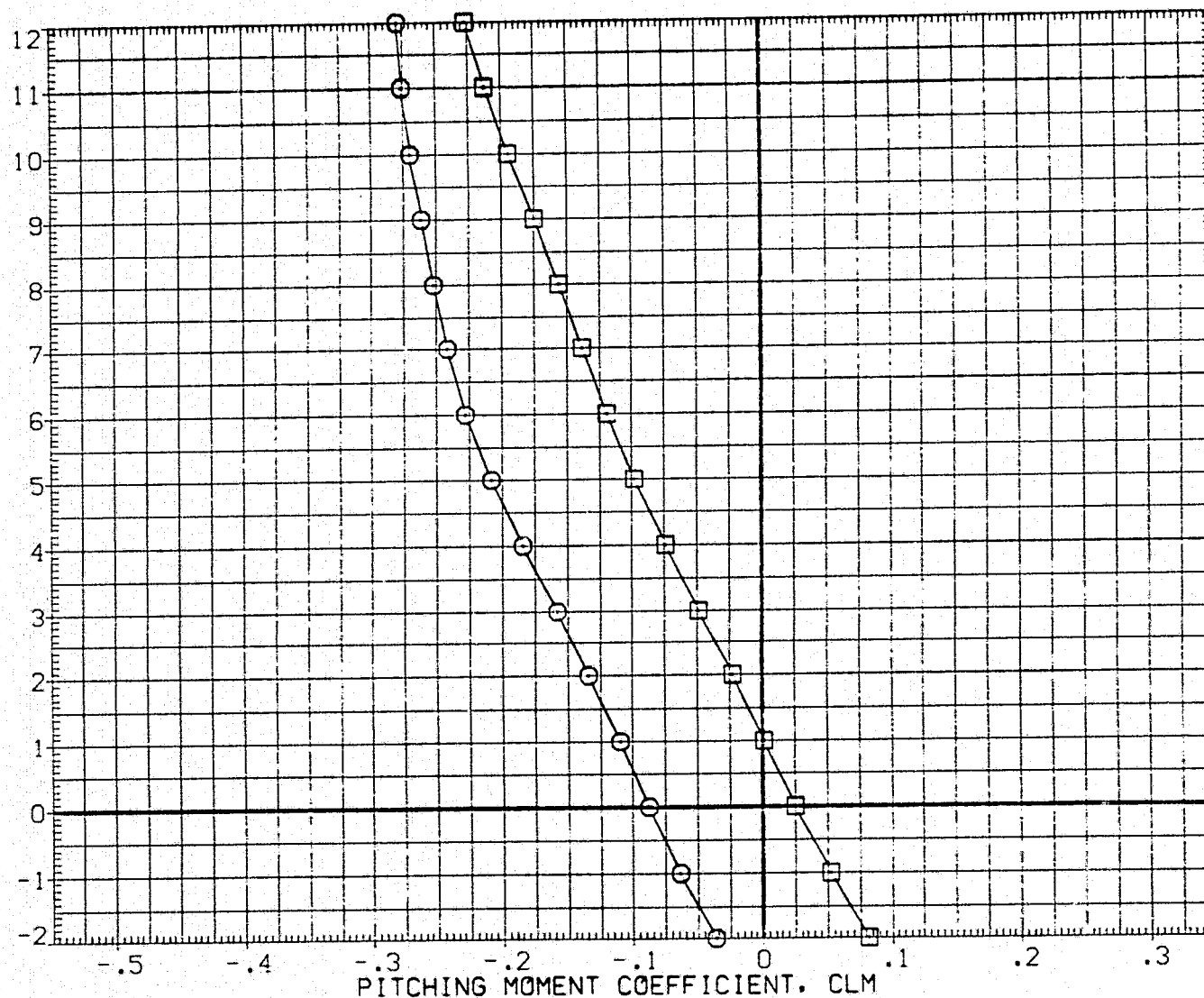


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM116)	○ CAS K1 F0 H15.6 V9.1 (PLUS. ORB TCS AT38.3)
(RGM090)	□ CAS K1 F0 H15.6 V9.1 (PLUS. ORB TCS AT38.2)

STAB	IORB	SS-6
1.000	4.000	.000
1.000	7.850	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

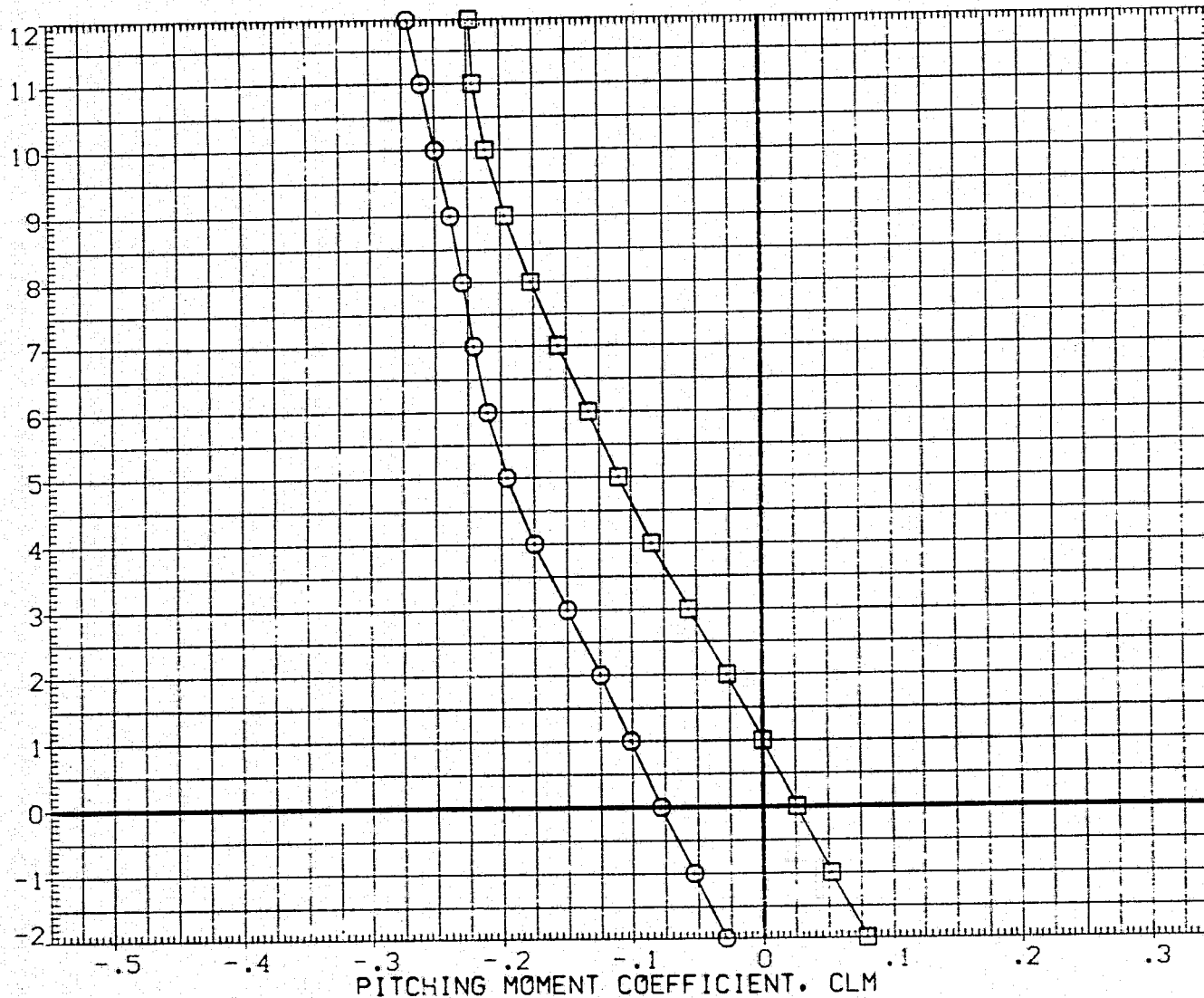


FIG.219 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY CONFIGURATION

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	10RB	S5-6
(FGM065)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	1.000	9.700	45.000
(RGM080)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.2)	1.000	7.850	45.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ. FT.
LREF	327.8000
BREF	2348.0000
XMRP	1339.9100
YMRP	.0000
ZMRP	190.7500
SCALE	.0300

LIFT COEFFICIENT, CL

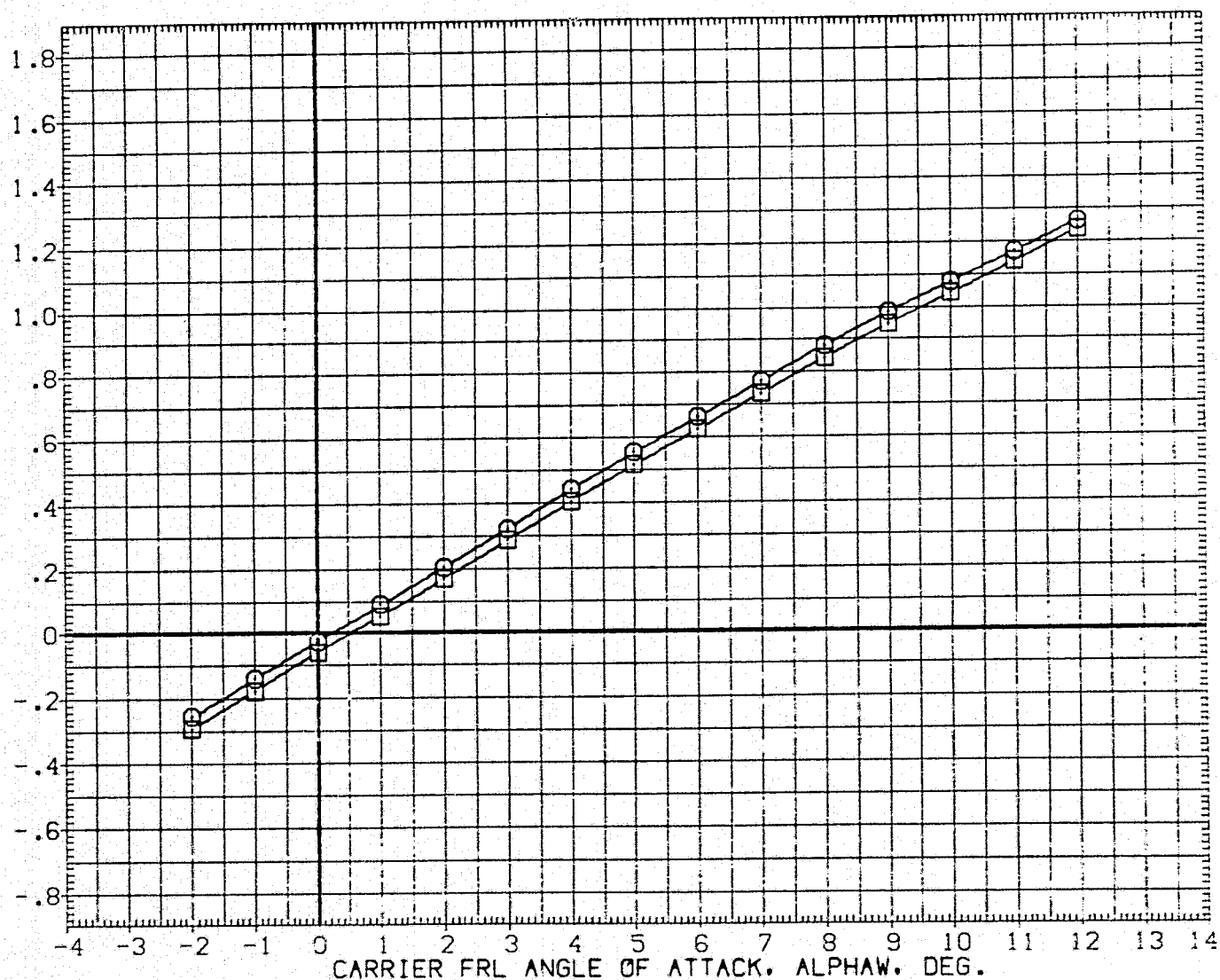


FIG.220 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION	
(FGM065)	○ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	9.700	45.000	SREF	5500.0000 SQ. FT.
(FGM080)	□ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	7.850	45.000	LREF	327.8000 IN.
					BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

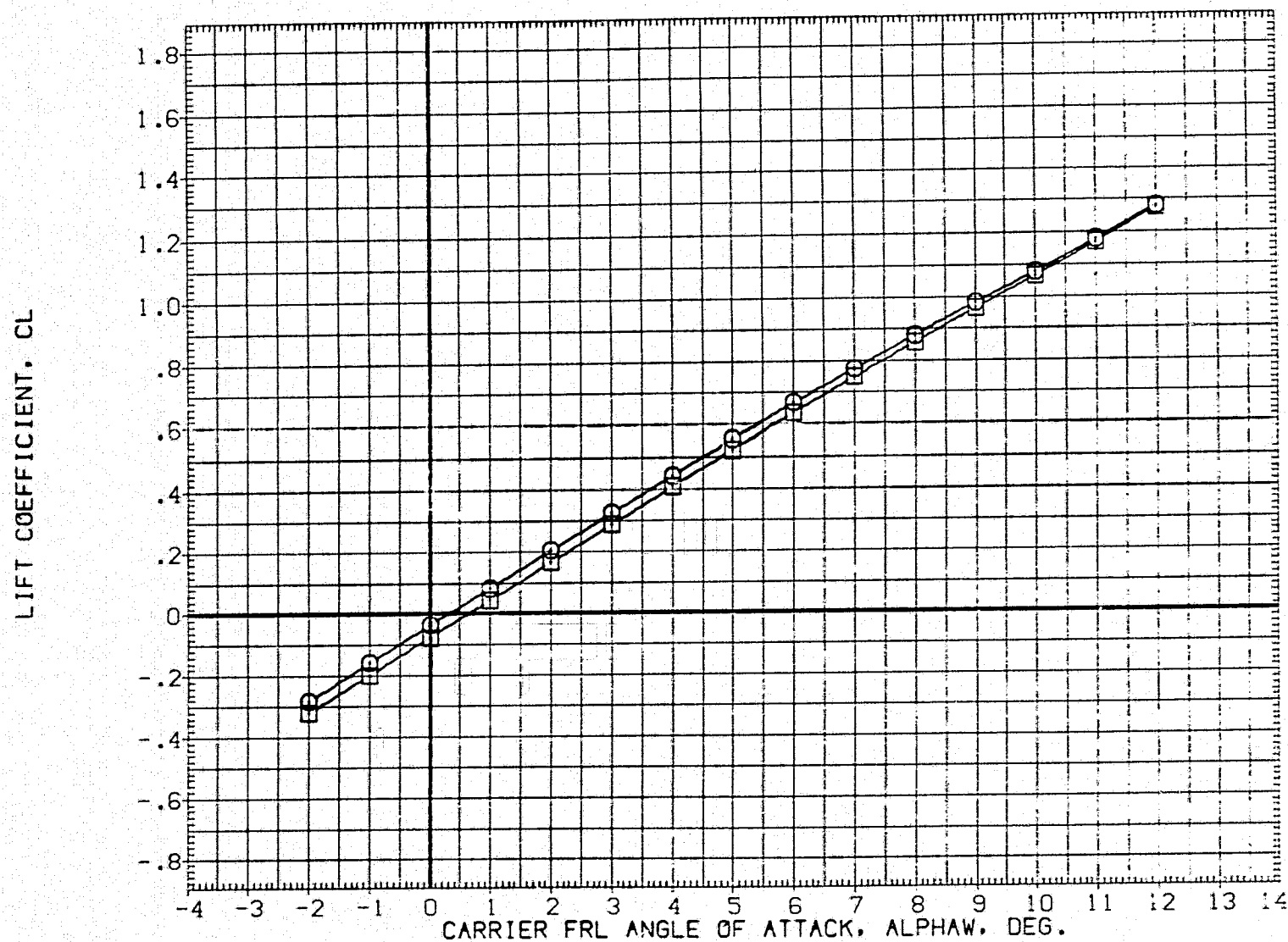


FIG.220 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION

(B)MACH = .60



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(FGM055)	CAS KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	9.700	45.000
(RGM080)	CAS KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	7.850	45.000

REFERENCE INFORMATION	
S/REF	5500.0000 SQ.FT.
L/REF	327.8000 IN.
E/REF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

LIFT COEFFICIENT, CL

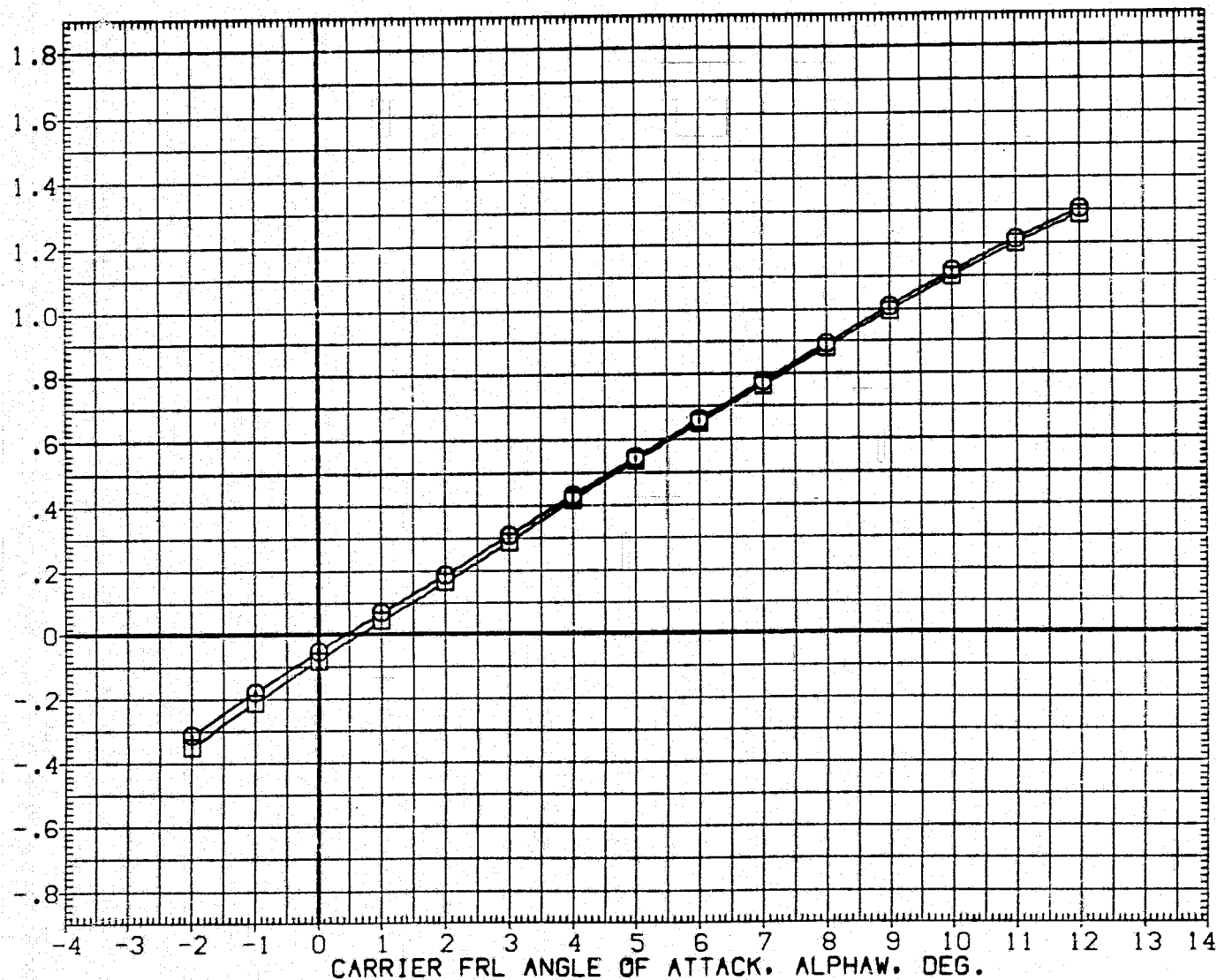


FIG.220 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION

(C)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FGM065)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM080)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

10RB

S5-6

1.000

9.700

45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

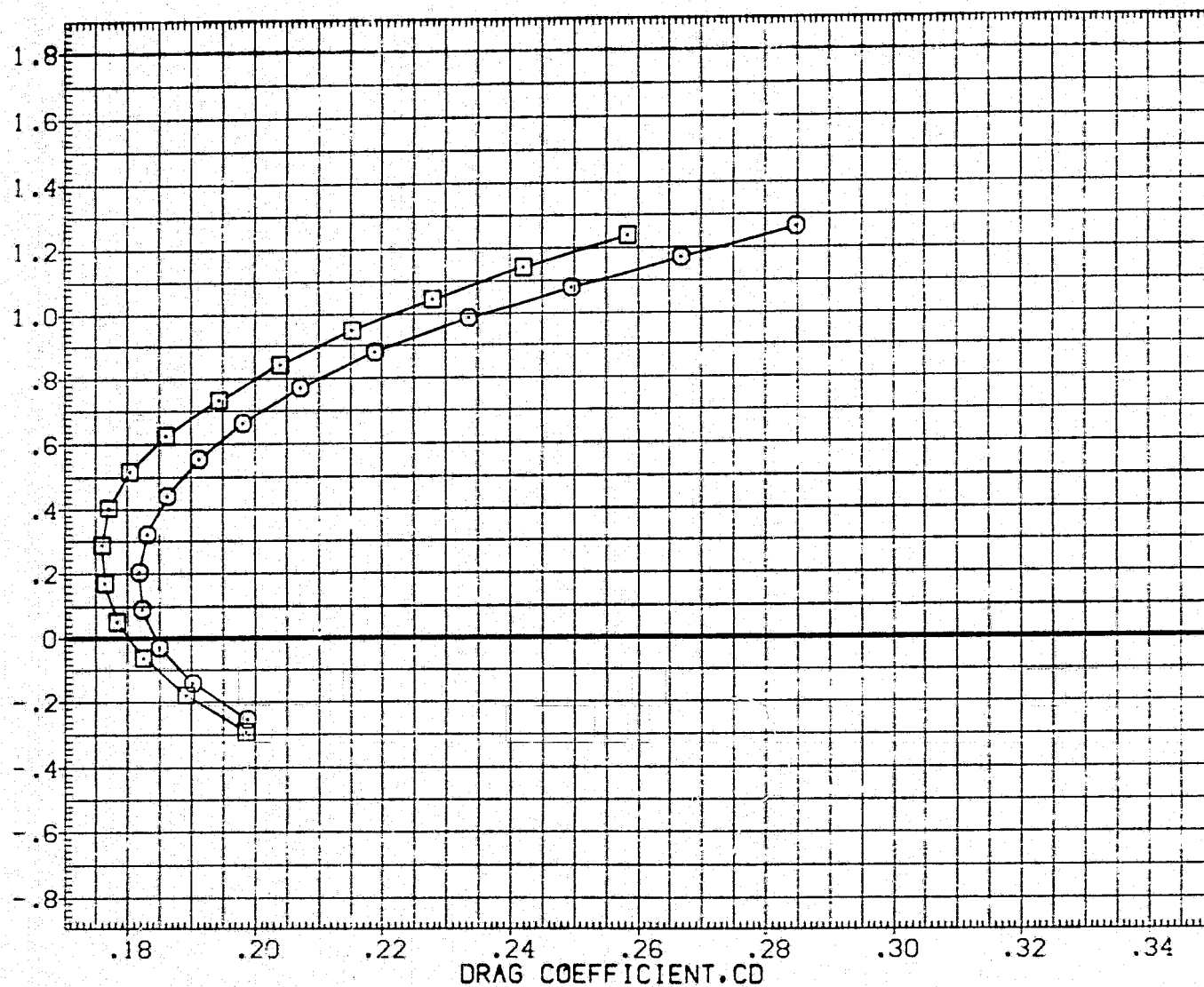


FIG.220 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION

(A)MACH = .50

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(FGM065) ○	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	9.700	45.000
(RGM080) □	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	7.850	45.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

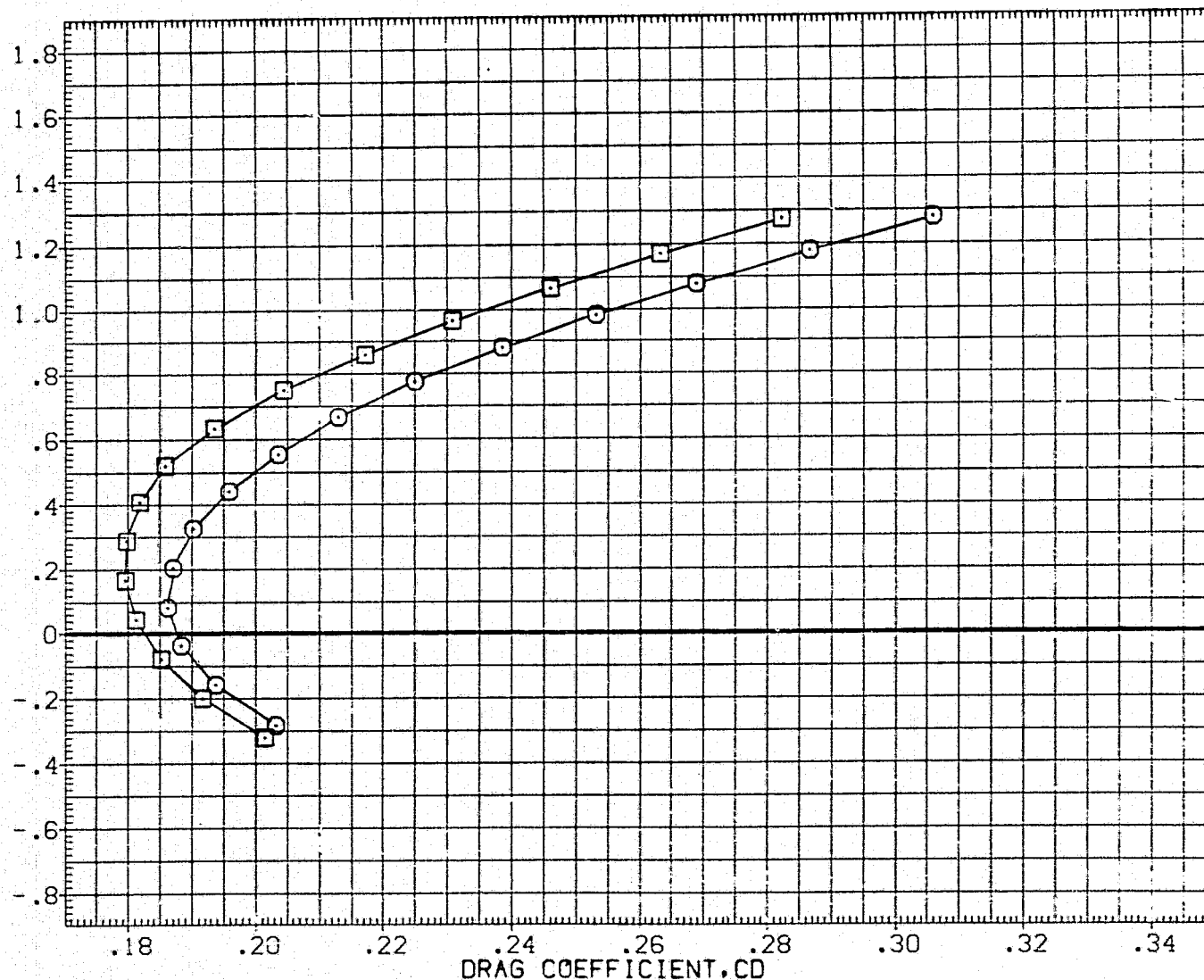


FIG.220 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (FGM065)  $\square$  CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )  
 (FGM080)  $\circ$  CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

STAB 10RB 55-6  
 1.000 9.700 45.000  
 1.000 7.850 45.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

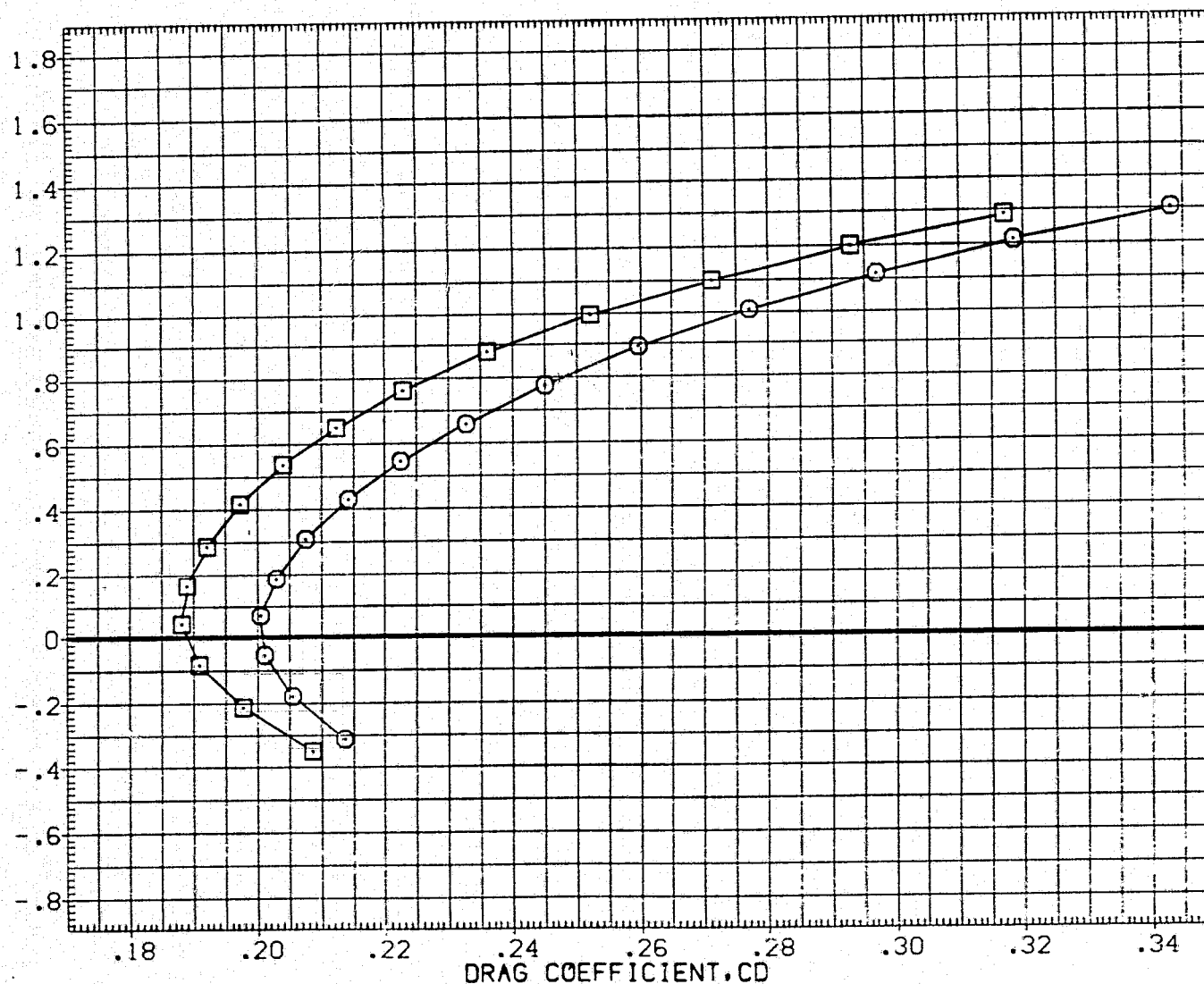


FIG.220 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(FGM065)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	9.700	45.000
(RGM080)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT32.2 )	1.000	7.650	45.000

REFERENCE INFORMATION		
SREF	5500.0000	SC.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. YC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

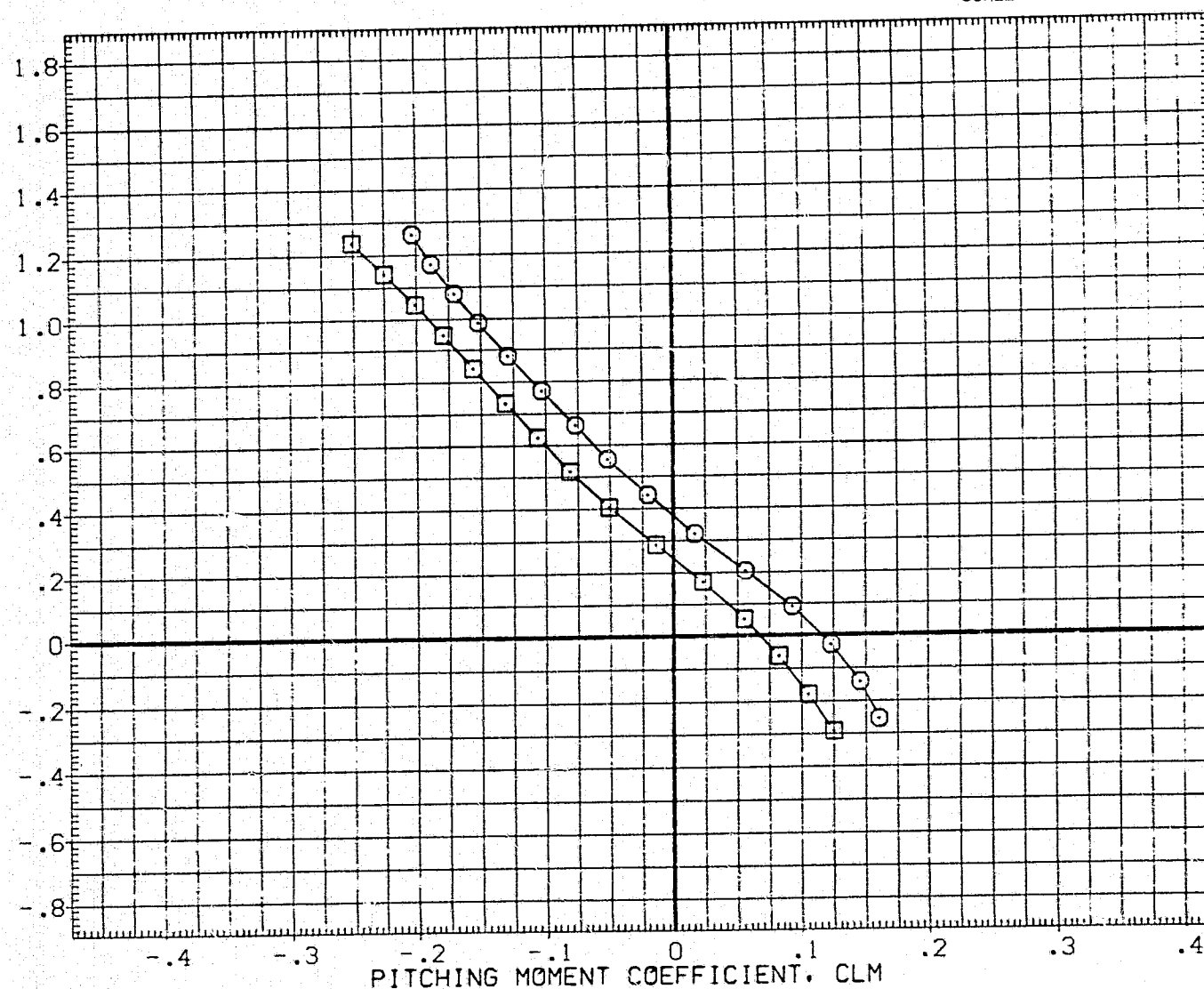


FIG.220 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(FGM065)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)
(RCM080)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2)

STAB	IORB	S5-6
1.000	9.700	45.000
1.000	7.850	45.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

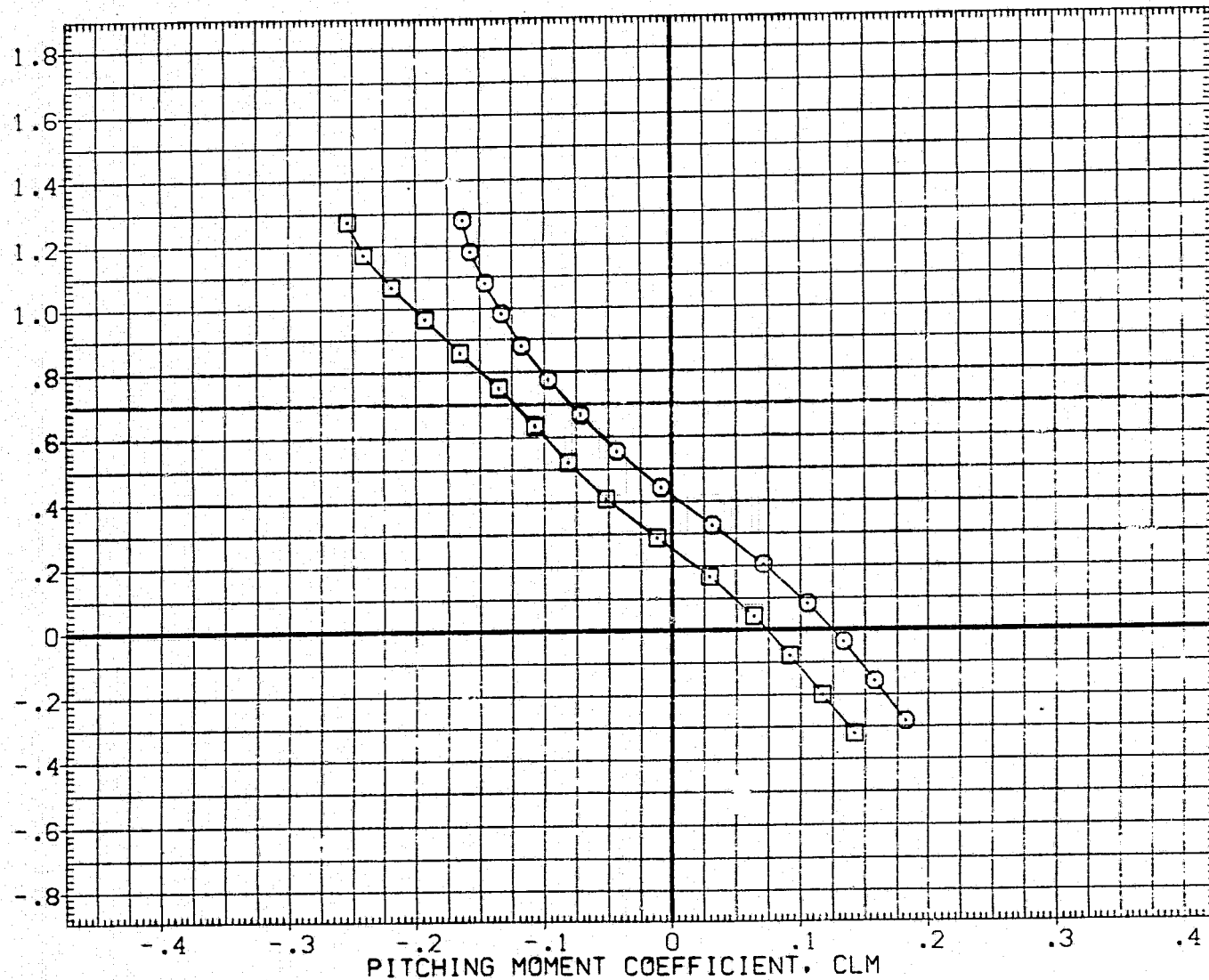


FIG.220 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(FGM065)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )
(RGM080)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB	IORB	S5-6
1.000	9.700	45.000
1.000	7.850	45.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

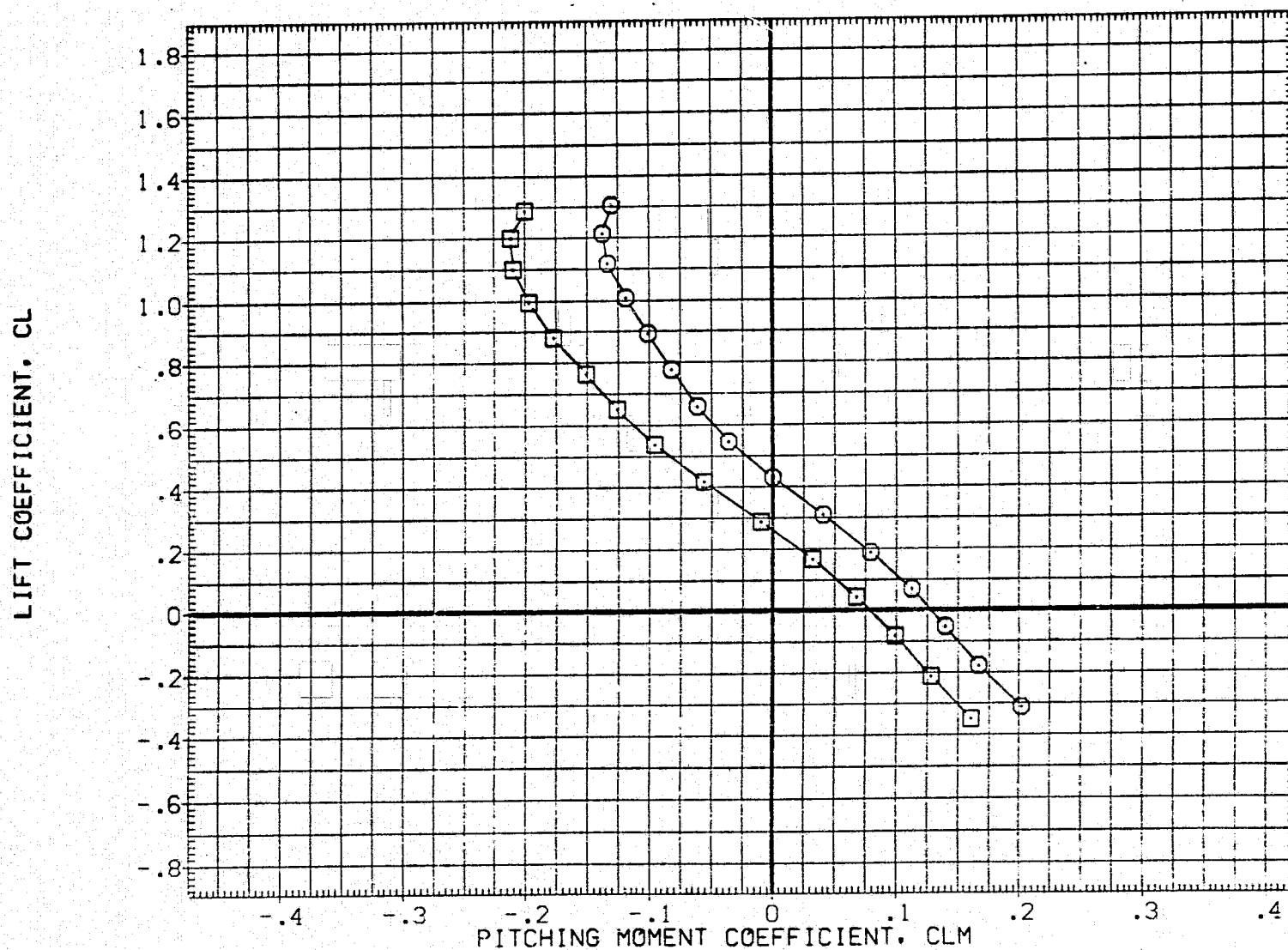


FIG.220 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION

(C)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(FGM055)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	9.700	45.000
(FGM080)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	7.850	45.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK. ALPHA. DEG.

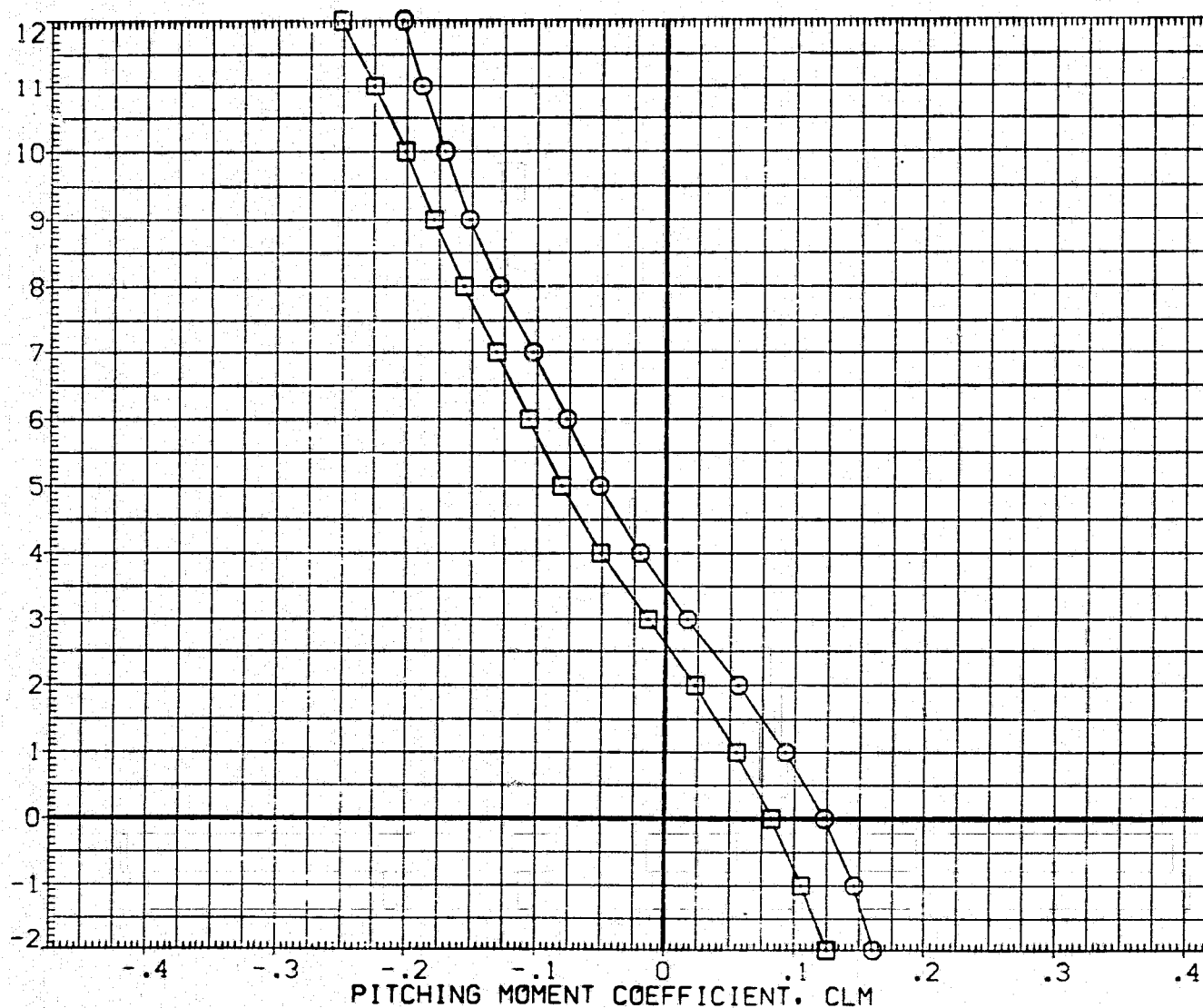
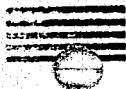


FIG.220 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION

(A)MACH = .50

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FGM065) ☐ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
(RGM080) ☐ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

IORB

S5-6

1.000  
1.000

9.700  
7.850

45.000  
45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
LREF 327.8000 IN.  
BREF 2348.0000 IN.  
XMRP 1339.9100 IN. XC  
YMRP .0000 IN. YC  
ZMRP 190.7500 IN. ZC  
SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

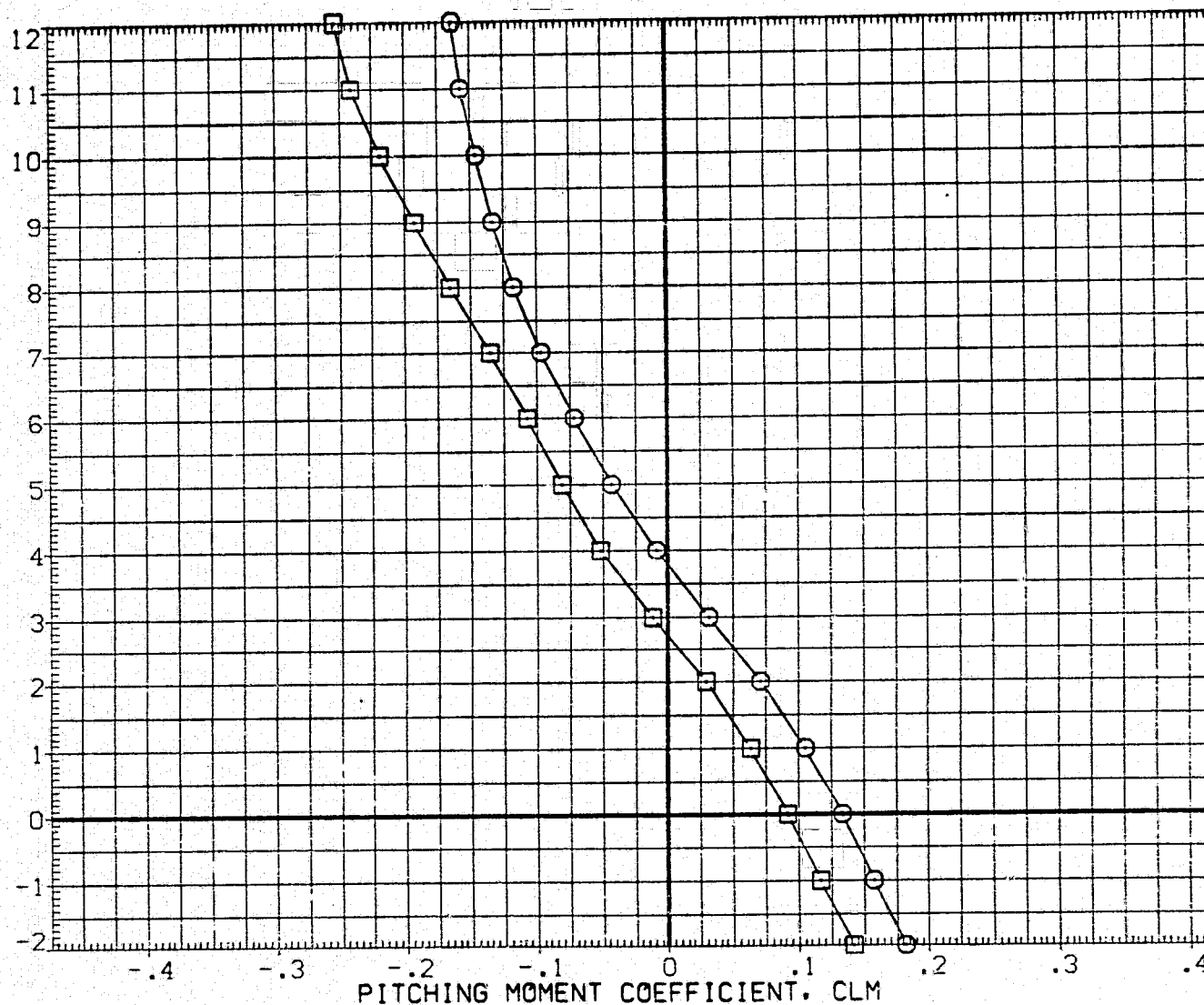


FIG.220 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION

(B)MACH = .60

## DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FGM065)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (FGM080)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

IORB

SS-6

1.000

9.700

45.000

## REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

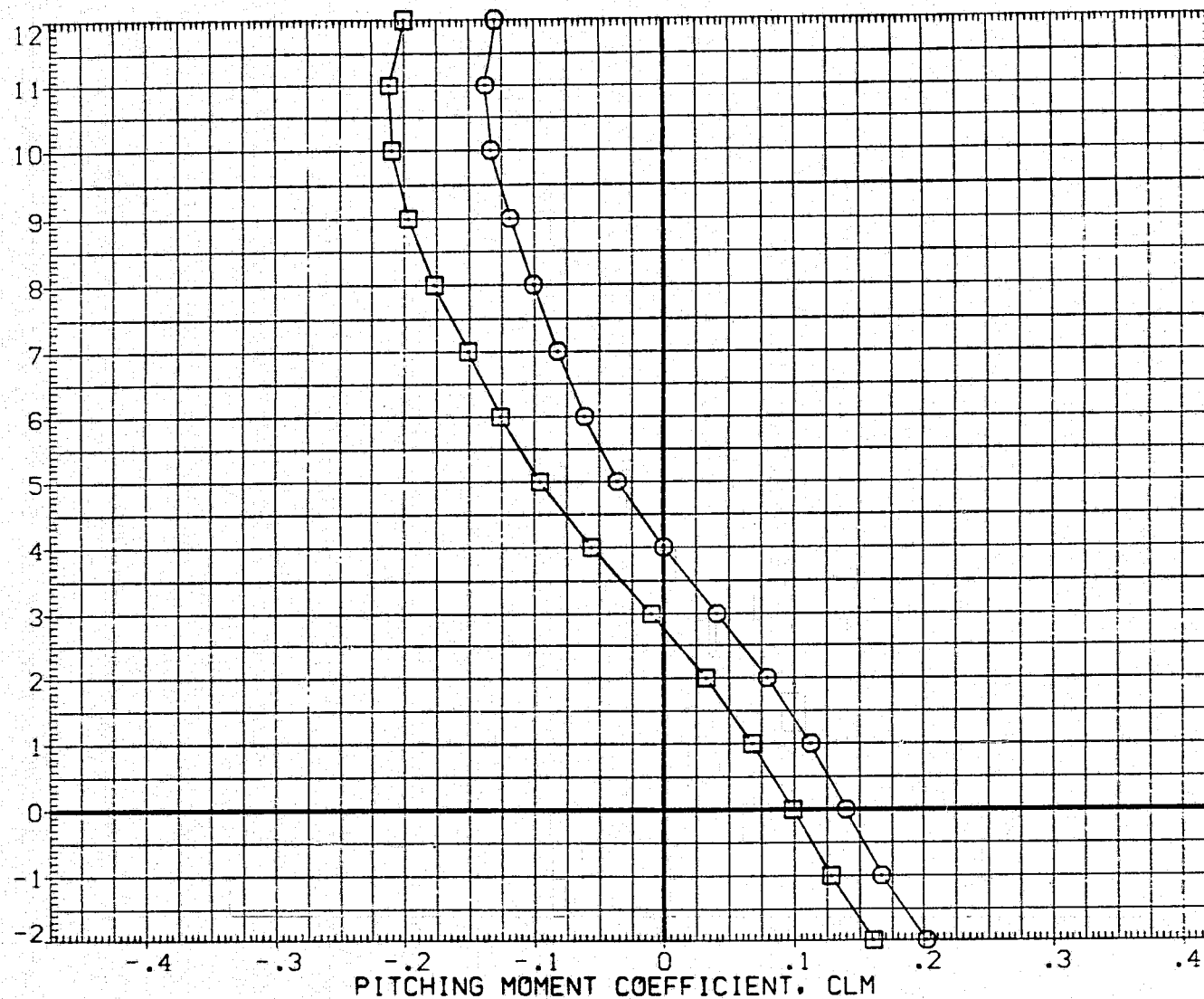


FIG.220 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH CONFIGURATION

(C)MACH = .70

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM096)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB 1.000  
 10RB 7.850  
 S5-6 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

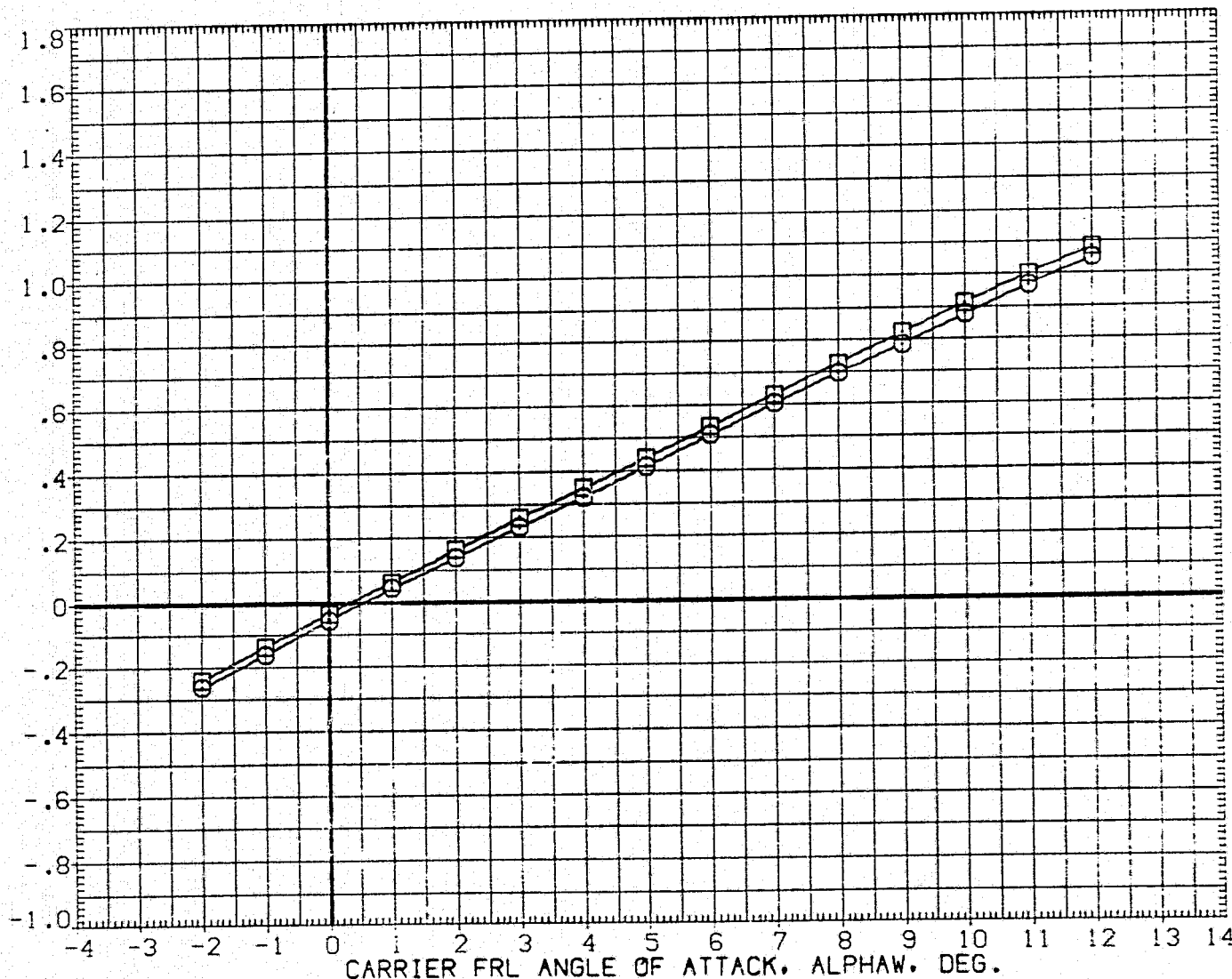


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(R3M081) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM096) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB 10RB S5-6  
 1.000 7.850 20.000  
 1.000 9.700 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

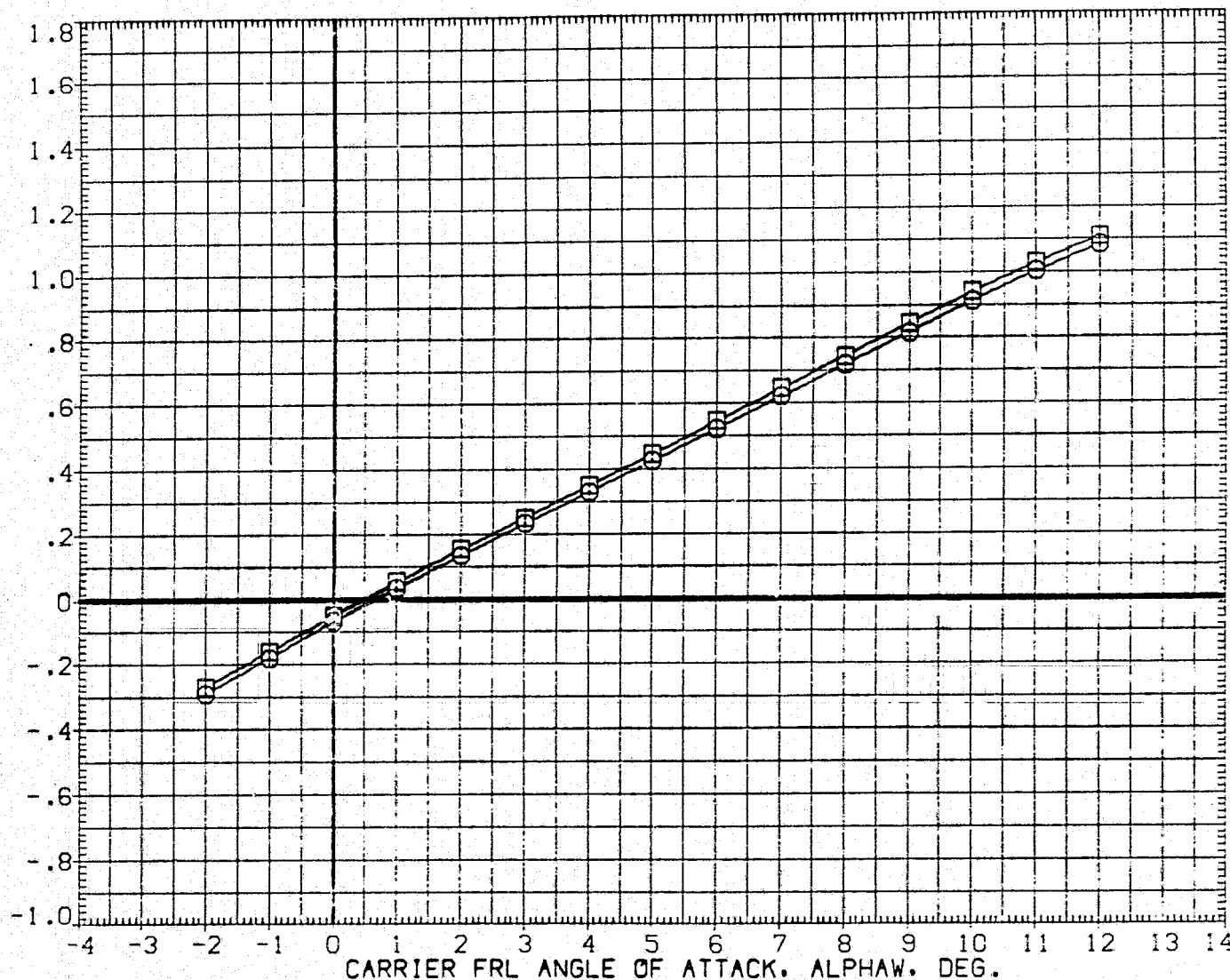


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

(B)MACH = .50

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGMDB1)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	7.850	20.000
(RGMU96)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	9.700	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
VMRP	1339.9100	IN. XC
VMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

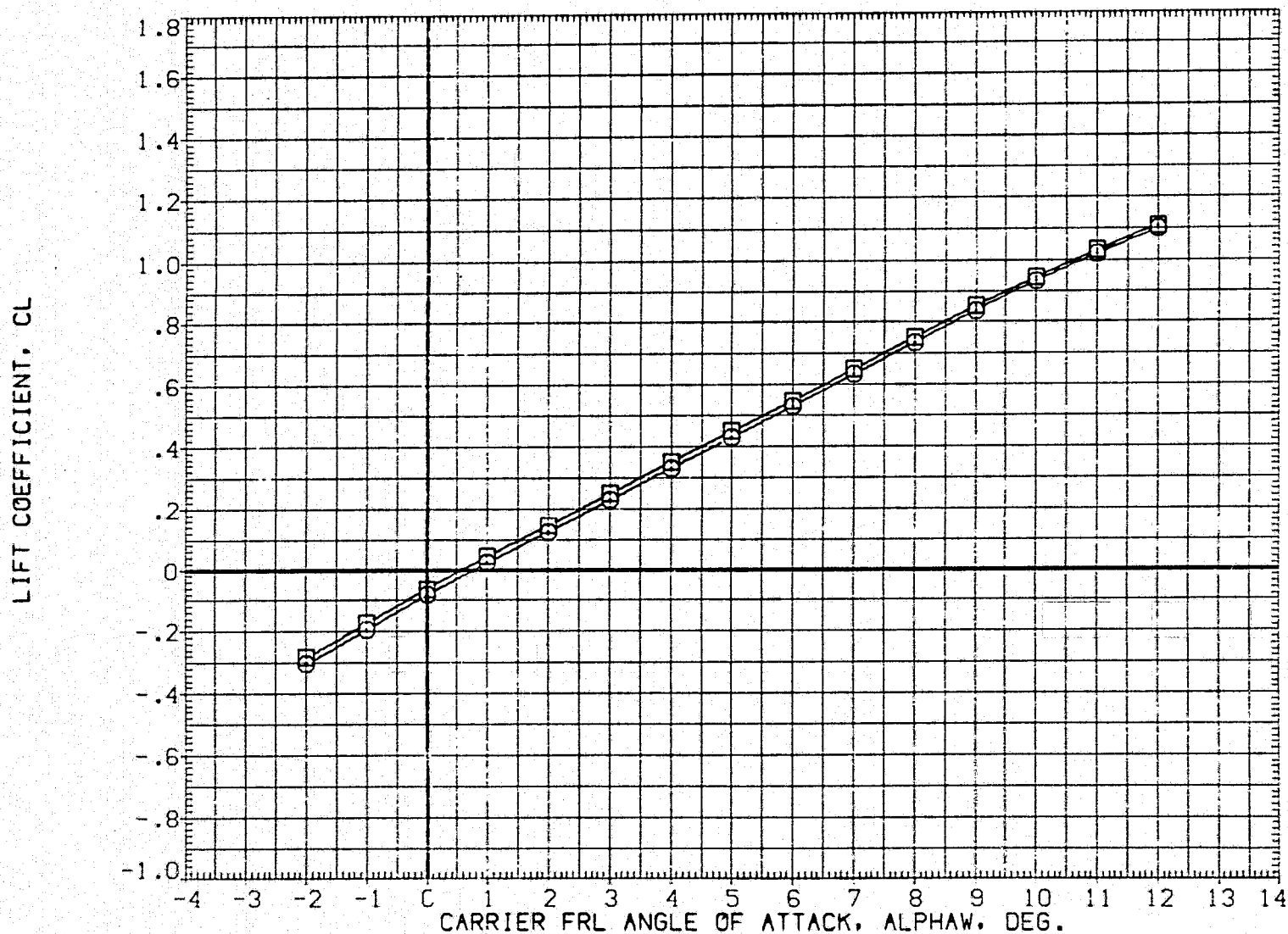


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION  
(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )  
(RGM096)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

STAB

10RB

S5-6

1.000

7.850

20.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

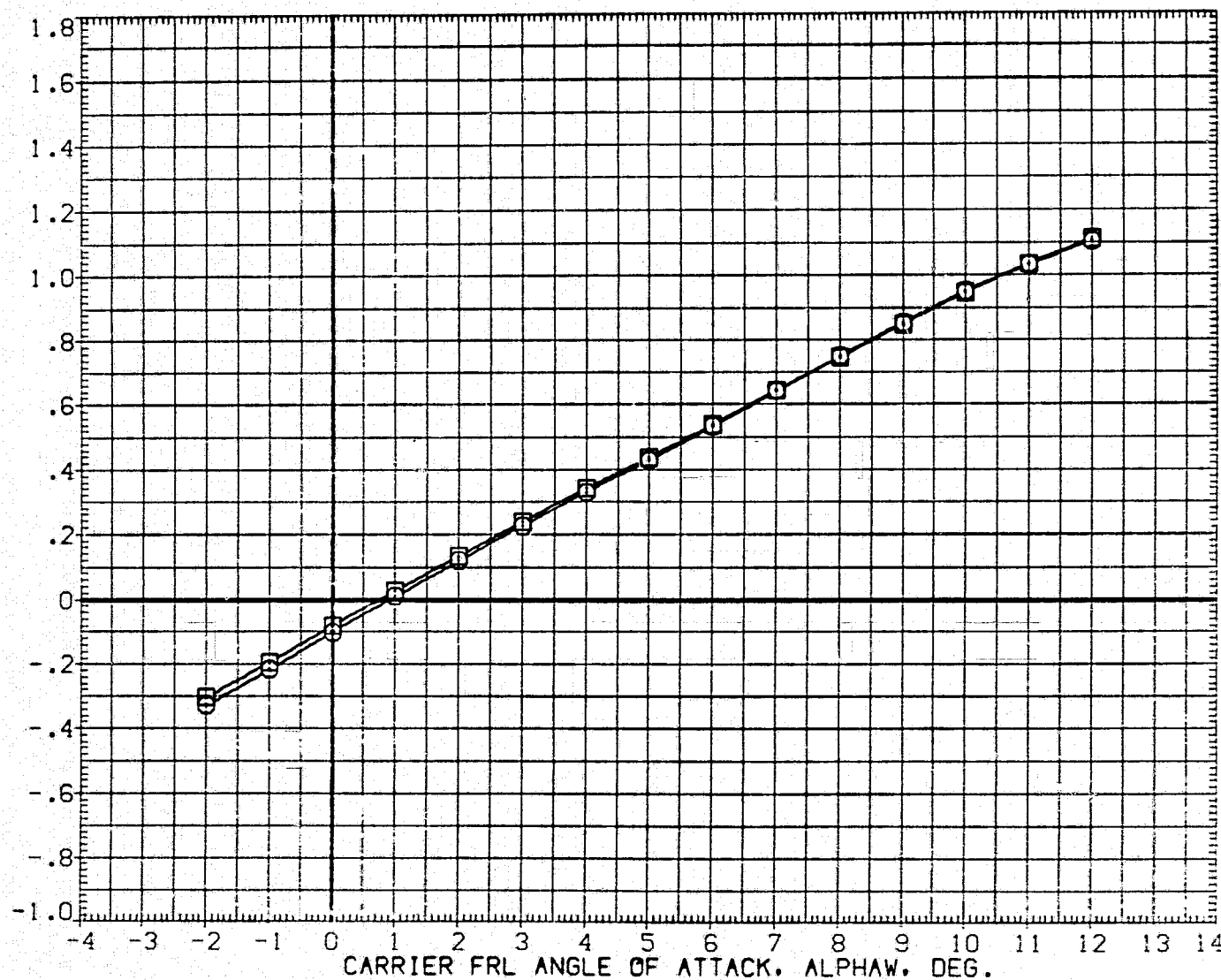


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

(D)MACH = .70

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(RGM081)	CAS K1 FO H15.6 V9.1 (PLUS ORB TC5 AT38.2)	1.000	7.850	20.000
(RGM096)	CAS K1 FO H15.6 V9.1 (PLUS ORB TC5 AT38.2)	1.000	9.700	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

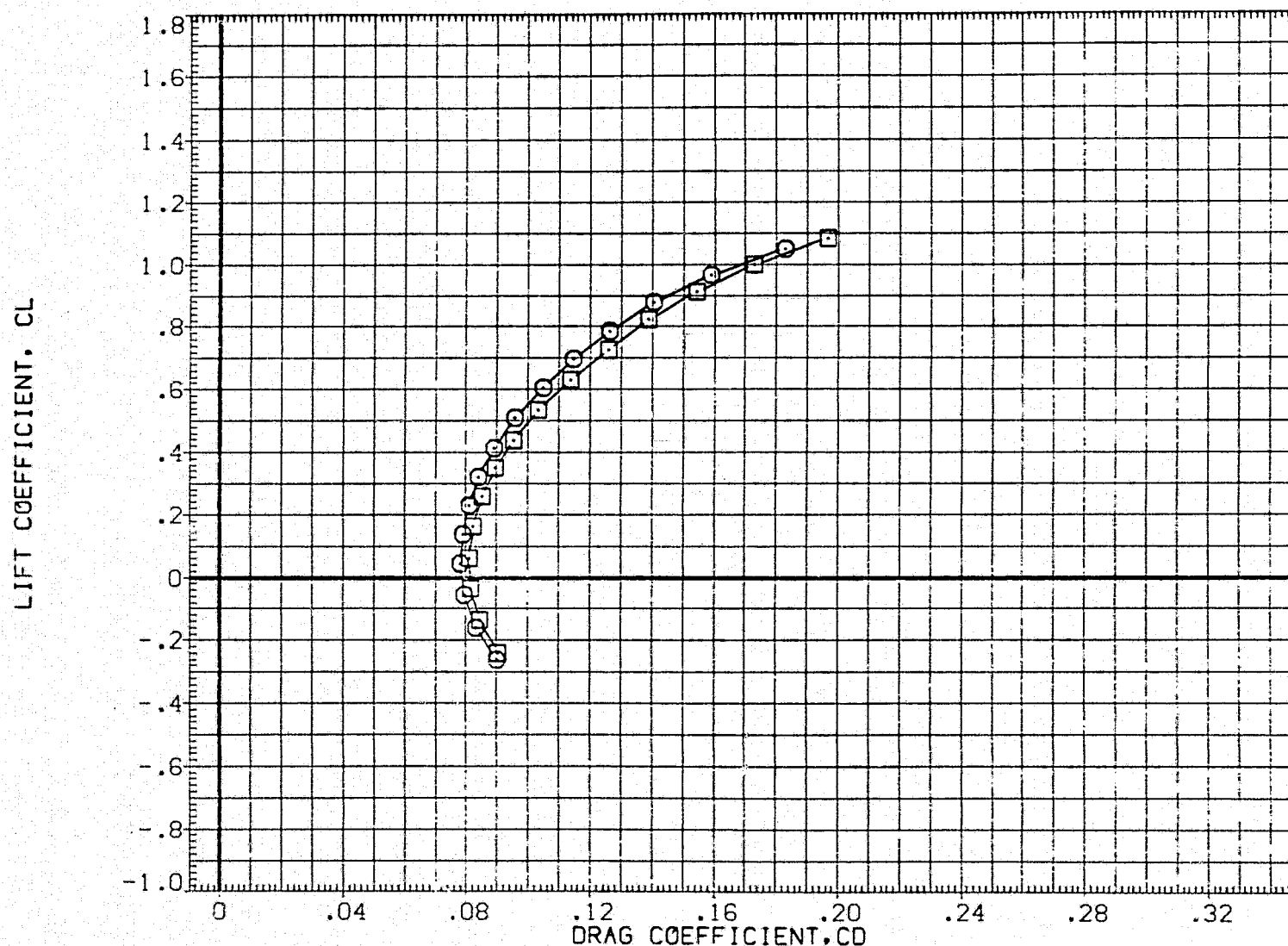


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION		
(R3M081)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	1.000	7.850	20.000	SREF	5500.0000	SQ.FT.
(R3M096)	□ CAS K1 FO H15.6 V3.1 (PLUS. ORB TCS AT38.2)	1.000	9.700	20.000	LREF	327.8000	IN.
					BREF	2348.0000	IN.
					YMRP	1339.9100	IN. XC
					ZMRP	.0000	IN. YC
					ZMRP	190.7500	IN. YC
					SCALE	.0300	

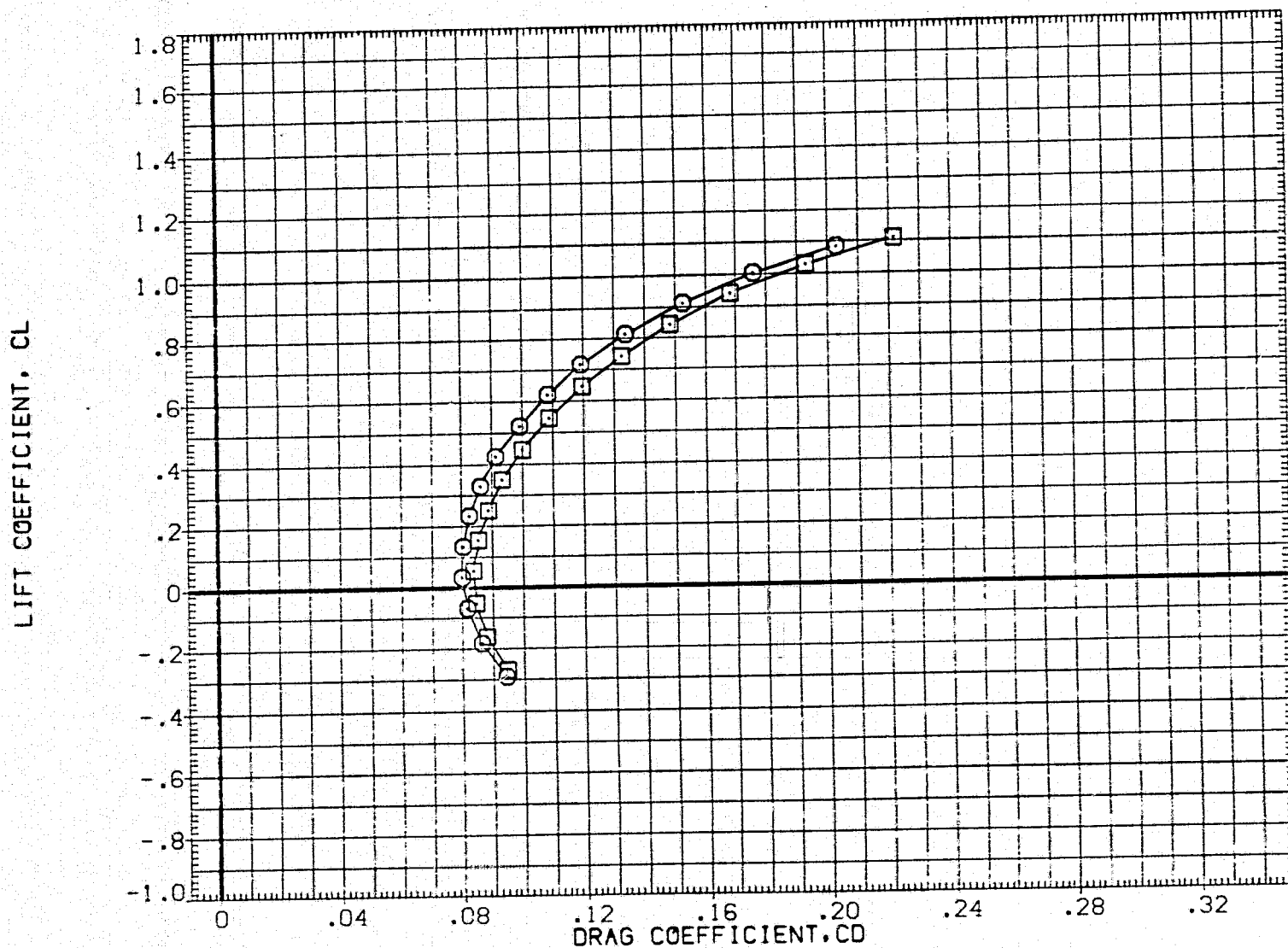


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

(B)MACH = .50



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081) ☐ CAS K1 F0 H15.6 V3.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM096) ☐ CAS K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB 10RB SS-6  
 1.000 7.850 20.000  
 1.000 9.700 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

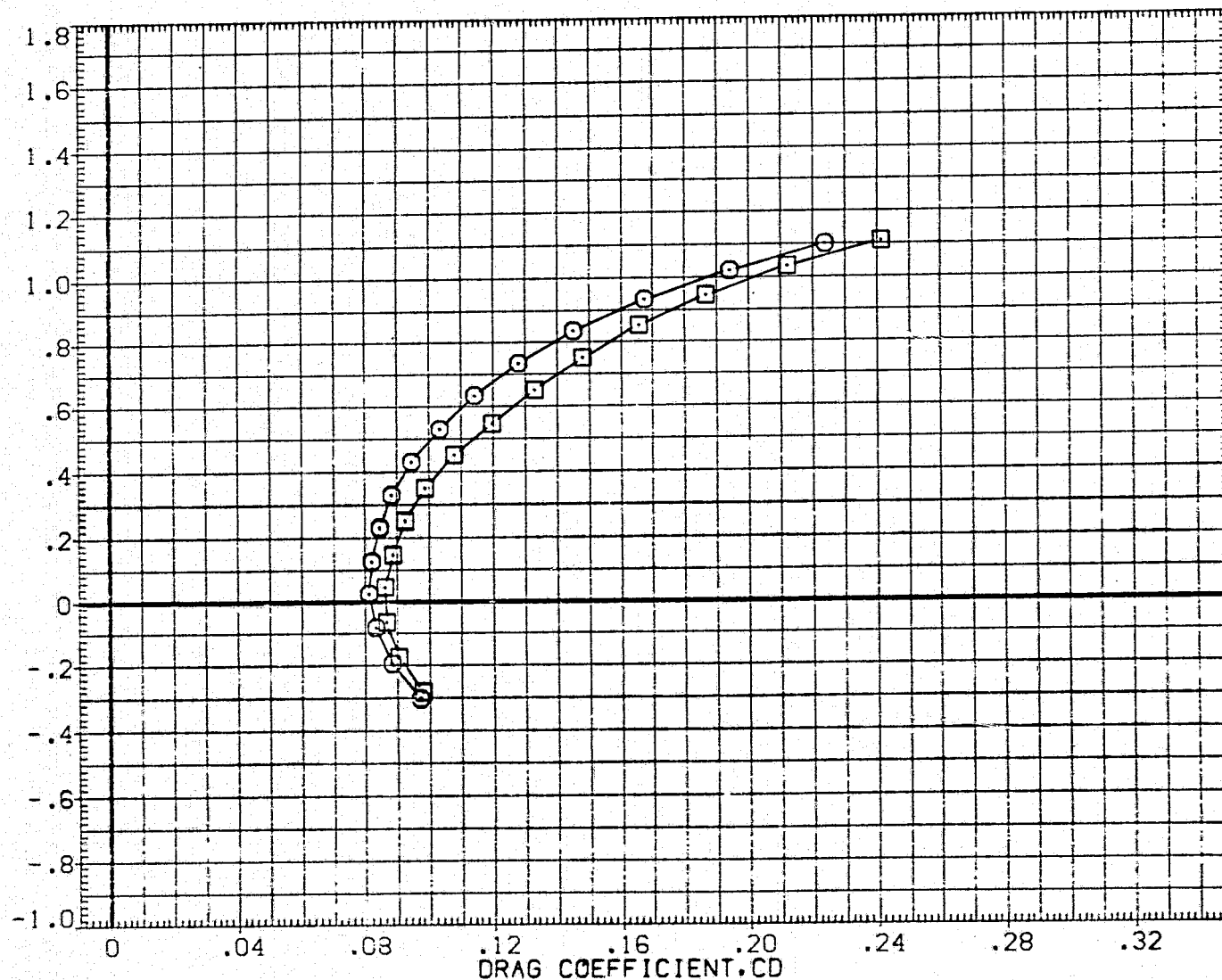


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION	
(RGM081)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	7.850	20.000	SREF	5500.0000 SQ.FT.
(RGM096)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	9.700	20.000	LREF	327.8000 IN.
					BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

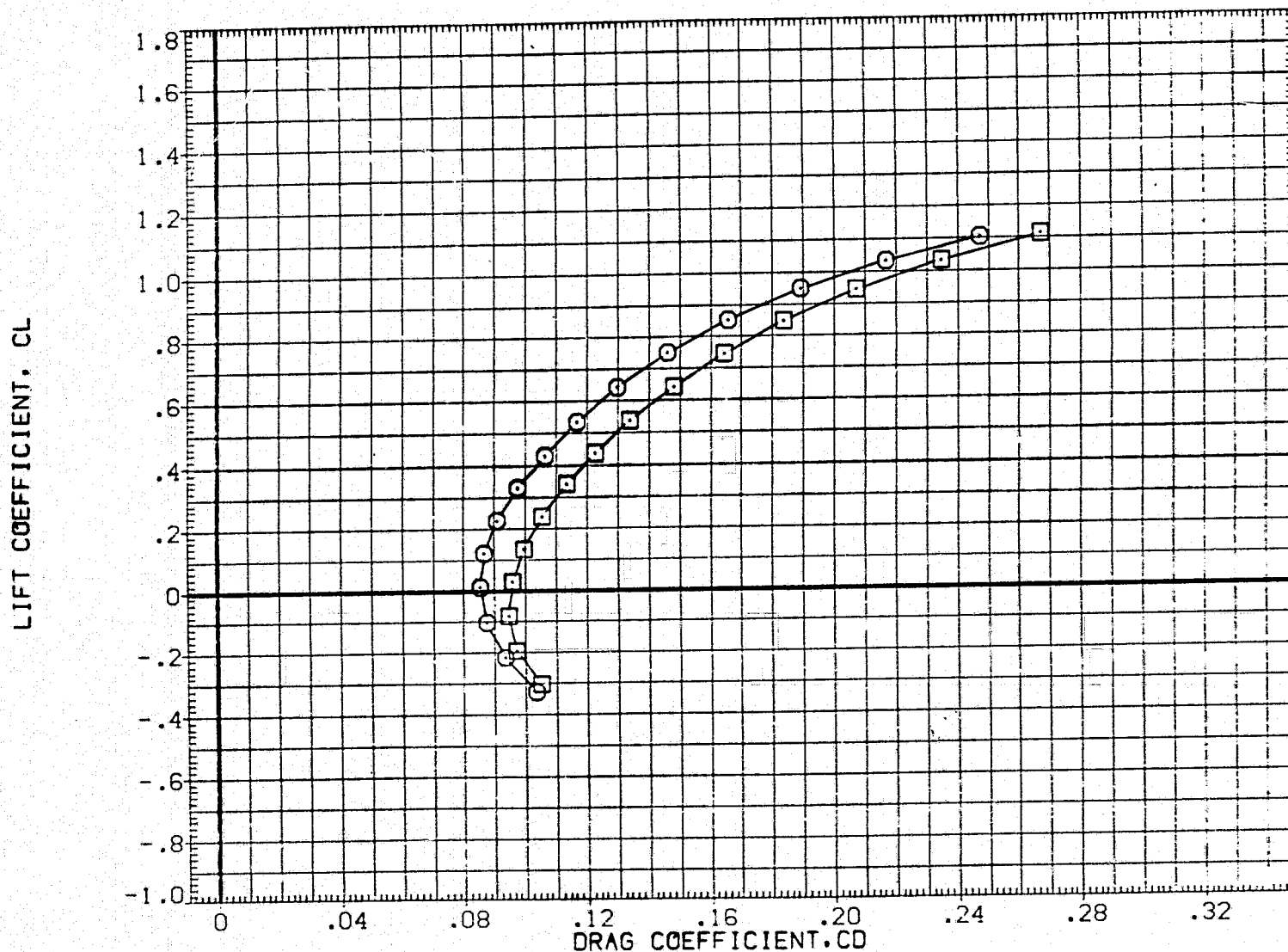


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(RGM081) ○	CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	7.850	20.000
(RGM096) □	CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	9.700	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

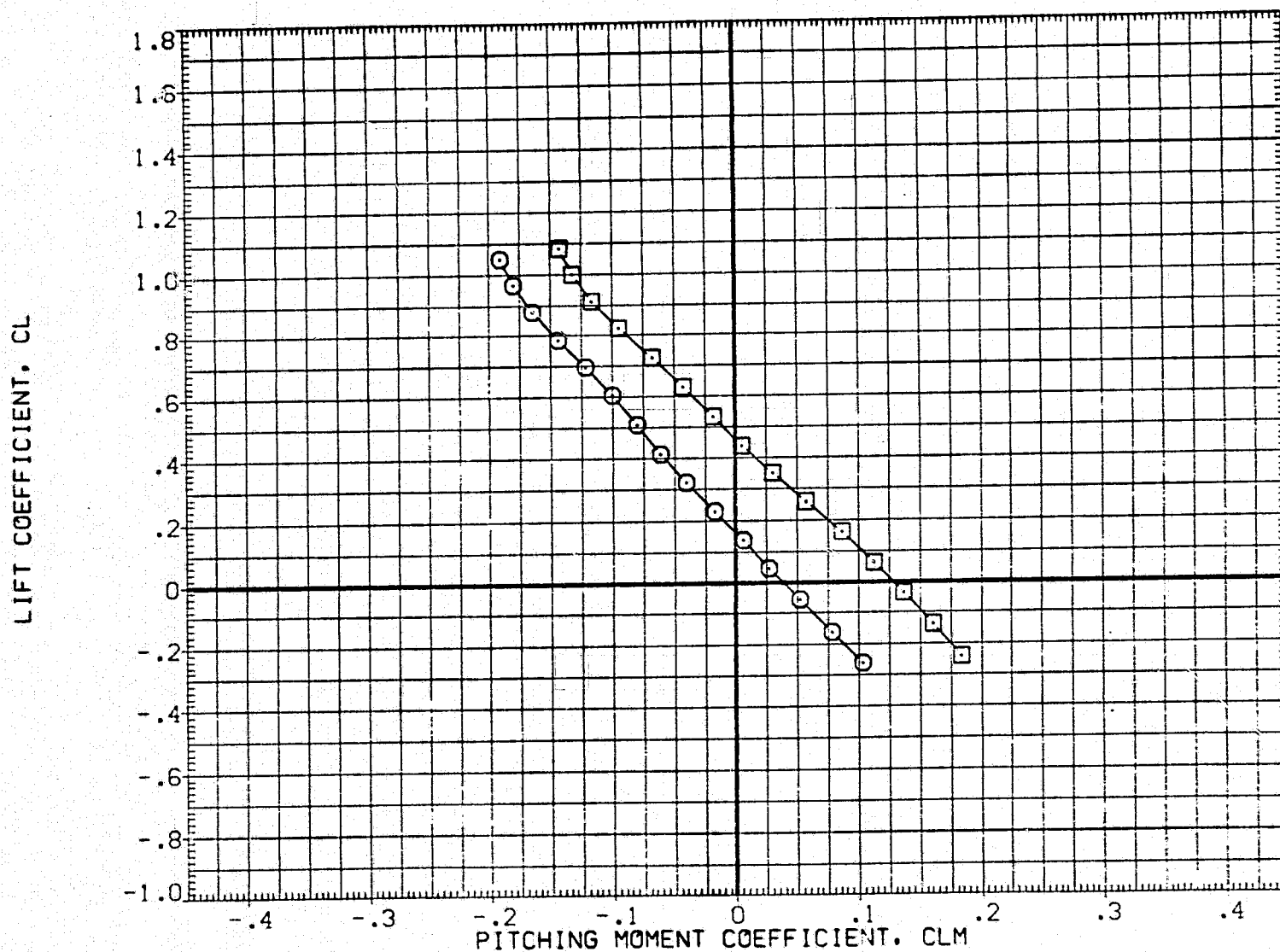


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION	
(RGM081)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	7.850	20.000	SREF	5500.0000 SQ.FT.
(RGM096)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	9.700	20.000	LREF	327.8000 IN.
					BREF	2348.0000 IN.
					XMRF	1339.9100 IN. XC
					YMRF	.0000 IN. YC
					ZMRF	190.7500 IN. ZC
					SCALE	.0300

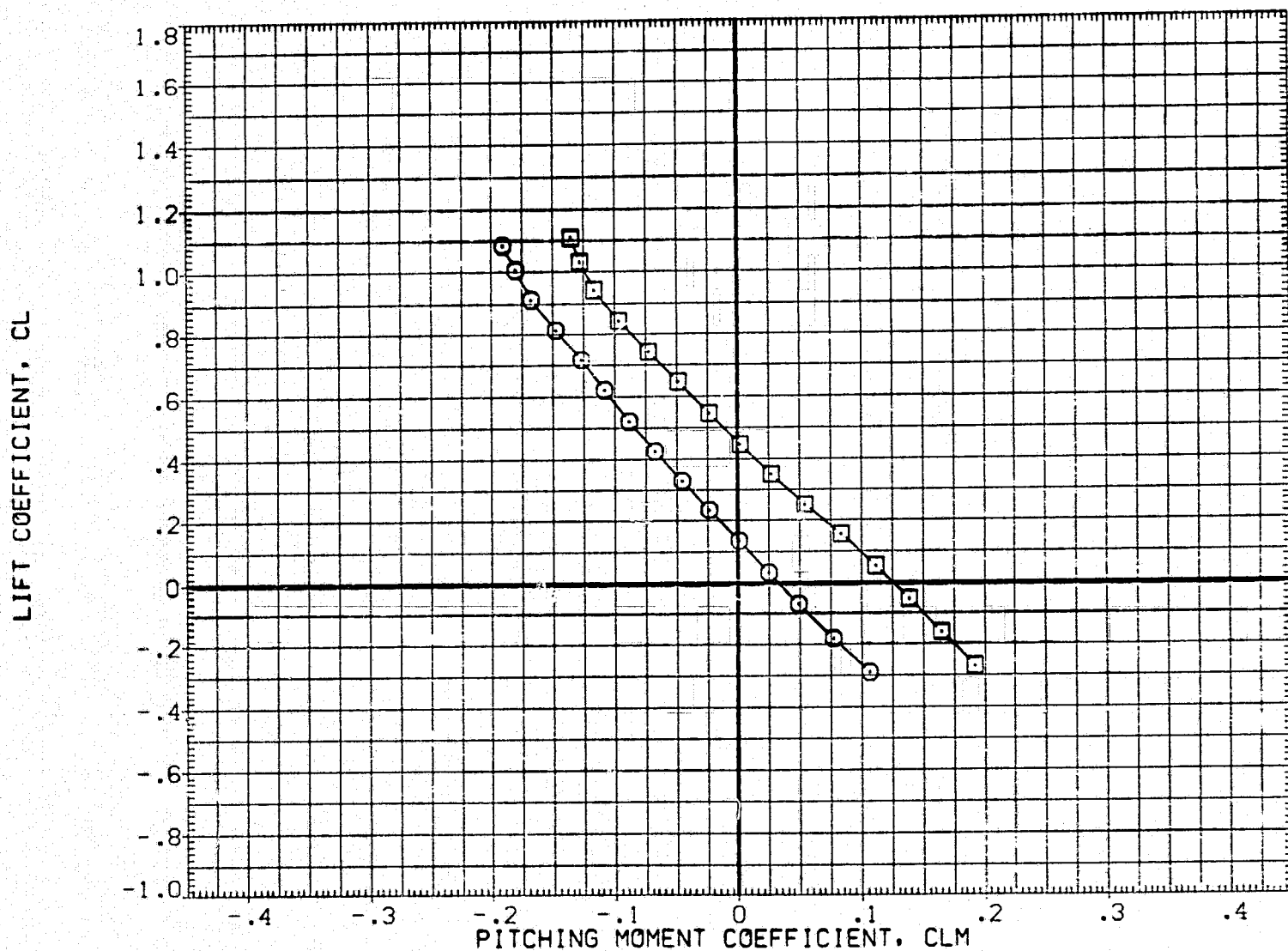


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION  
(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ICRB	SS-6
(RGM081) ○	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	7.850	20.000
(RGM096) □	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	9.700	20.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

LIFT COEFFICIENT, CL

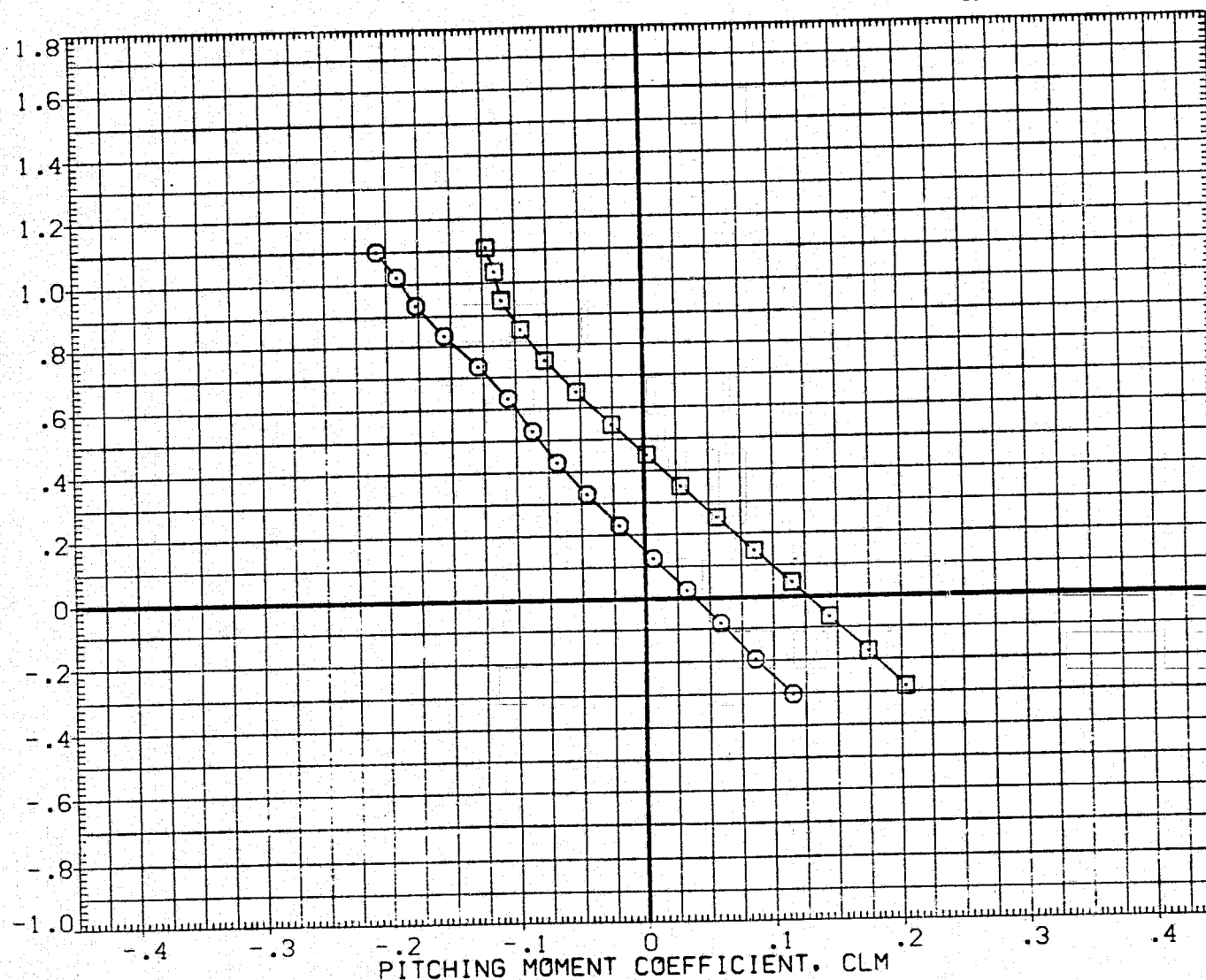


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION  
(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)	○	CAS	K1	FO	H15.6	V9.1	(PLUS. ORB TC5 AT38.2 )
(RGM096)	□	CAS	K1	FO	H15.6	V9.1	(PLUS. ORB TC5 AT38.2 )

STAB	10RB	S5-6
1.000	7.850	20.000
1.000	9.700	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XM RP	1339.9100	IN. XC
YM RP	.0000	IN. YC
ZM RP	190.7500	IN. ZC
SCALE	.03CO	

LIFT COEFFICIENT, CL

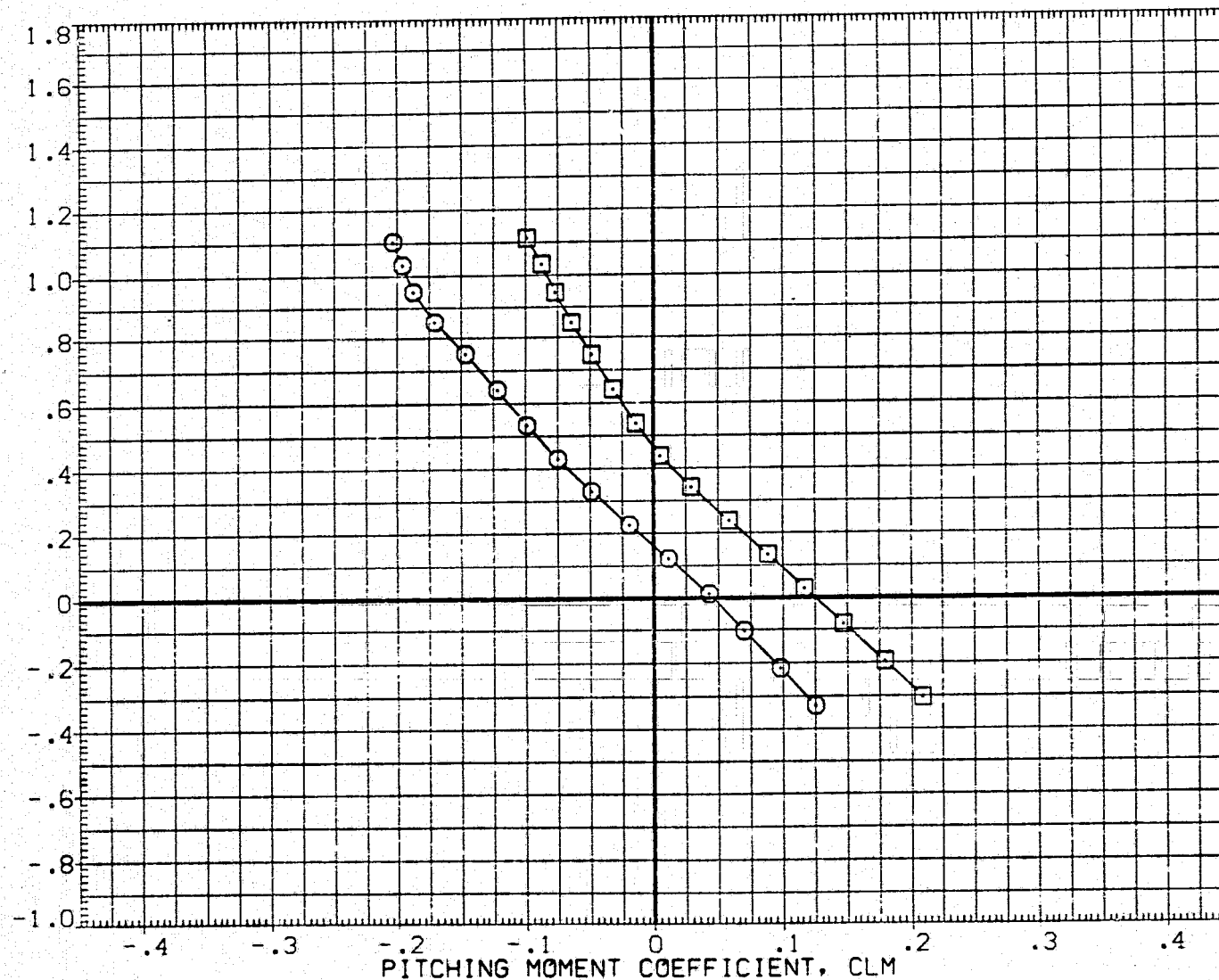


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

(D)MACH = .70

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RSM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RSM096)  $\circ$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB 10RB S5-6  
 1.000 7.850 20.000  
 1.000 9.700 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2349.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

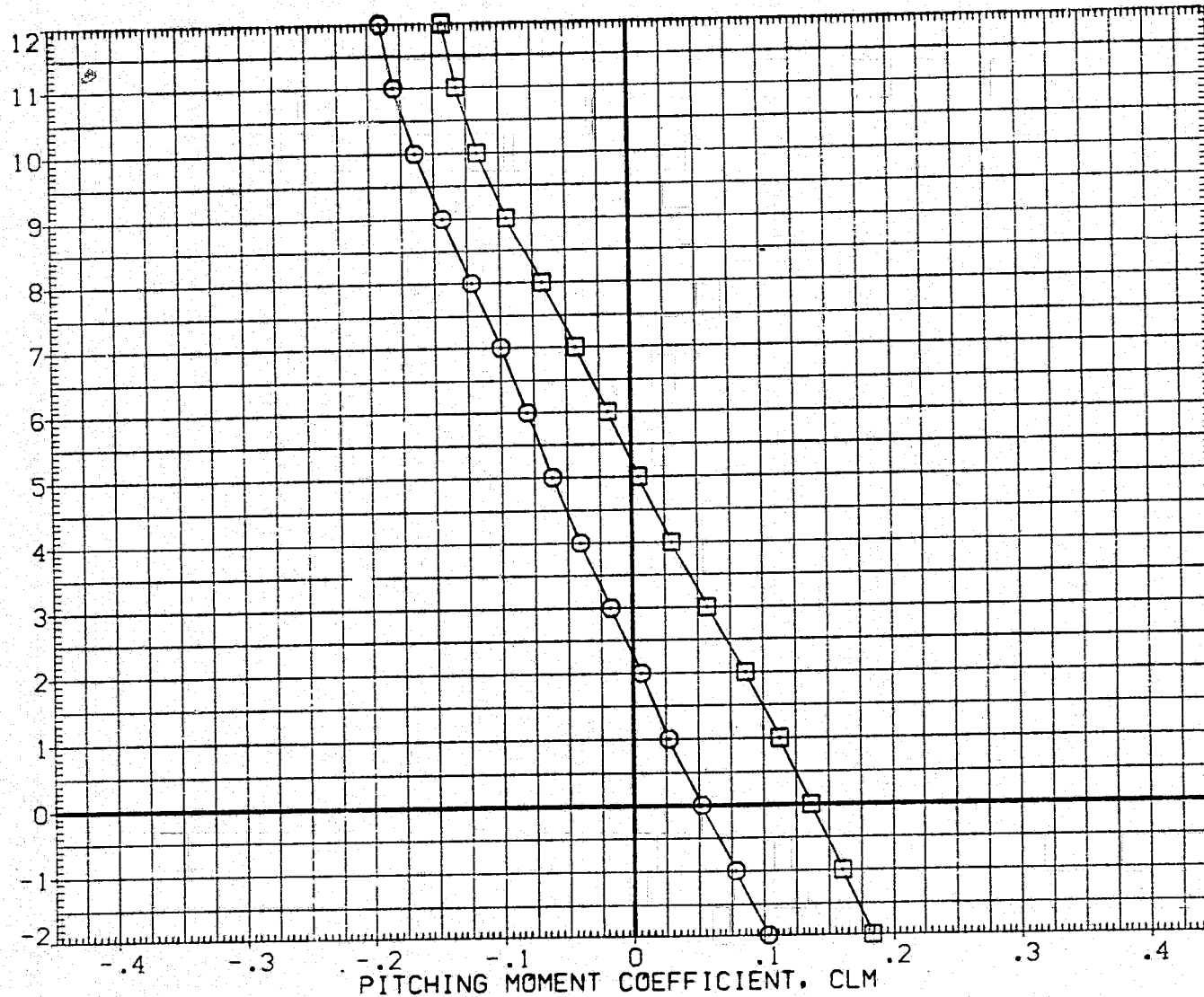


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM081)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM096)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB 10RB SS-6  
 1.000 7.850 20.000  
 1.000 9.700 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

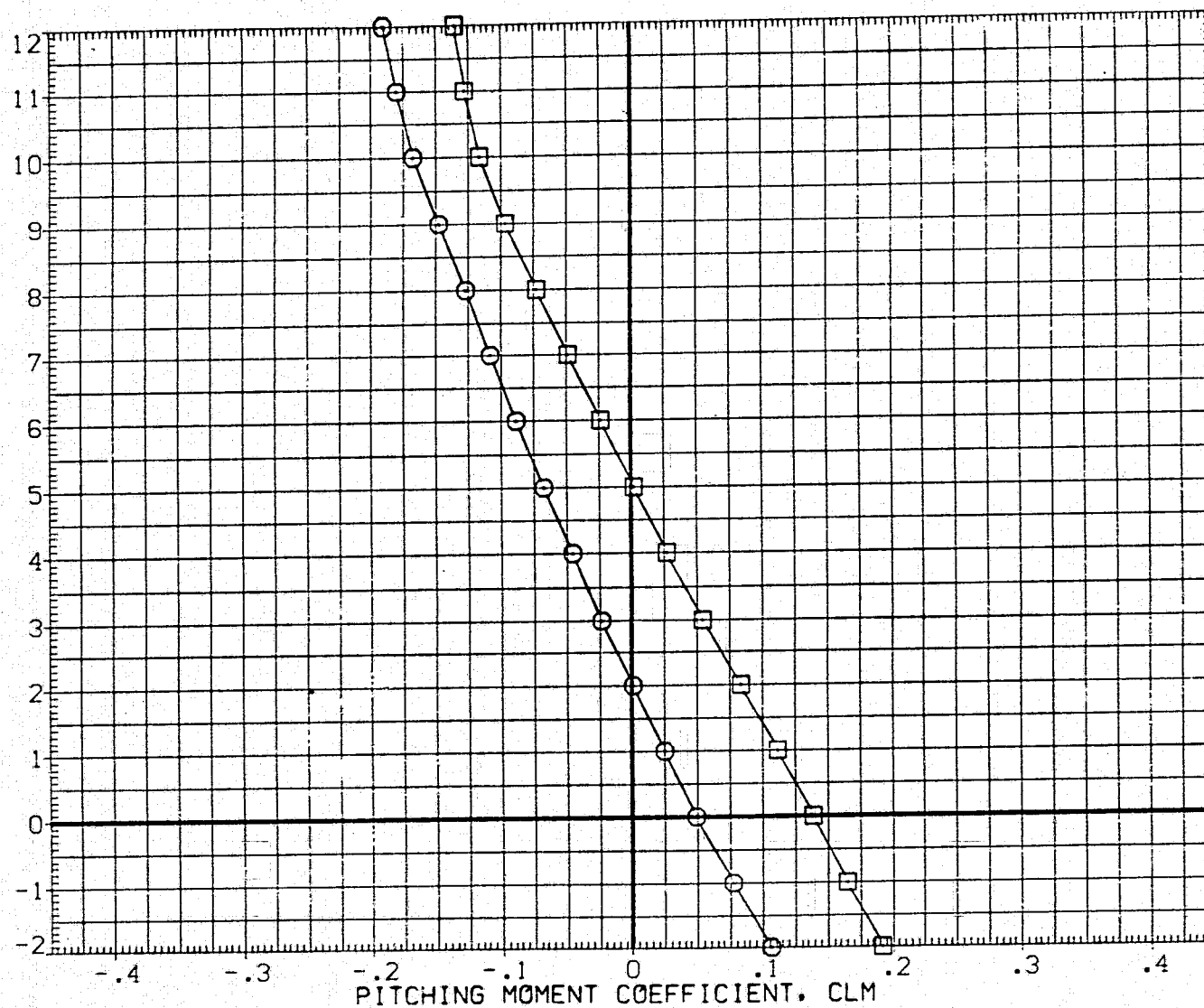


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

(B)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION	
(RGM081)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	7.850	20.000	SREF	5500.0000 SQ.FT.
(RGM096)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	9.700	20.000	LREF	327.8000 IN.
					BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

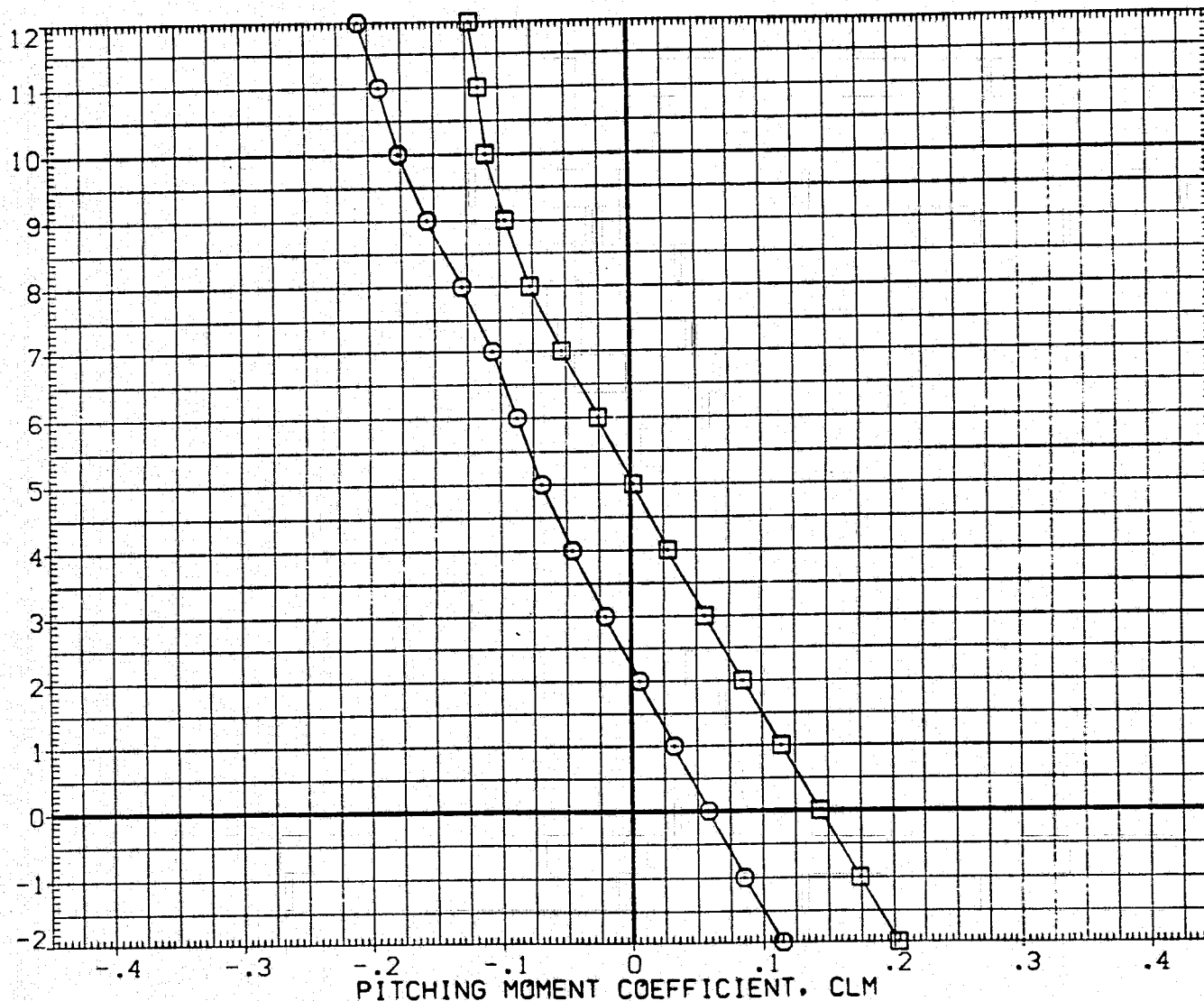


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081) ☐ CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM096) ☐ CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB 10RB SS-6  
 1.000 7.850 20.000  
 1.000 9.700 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

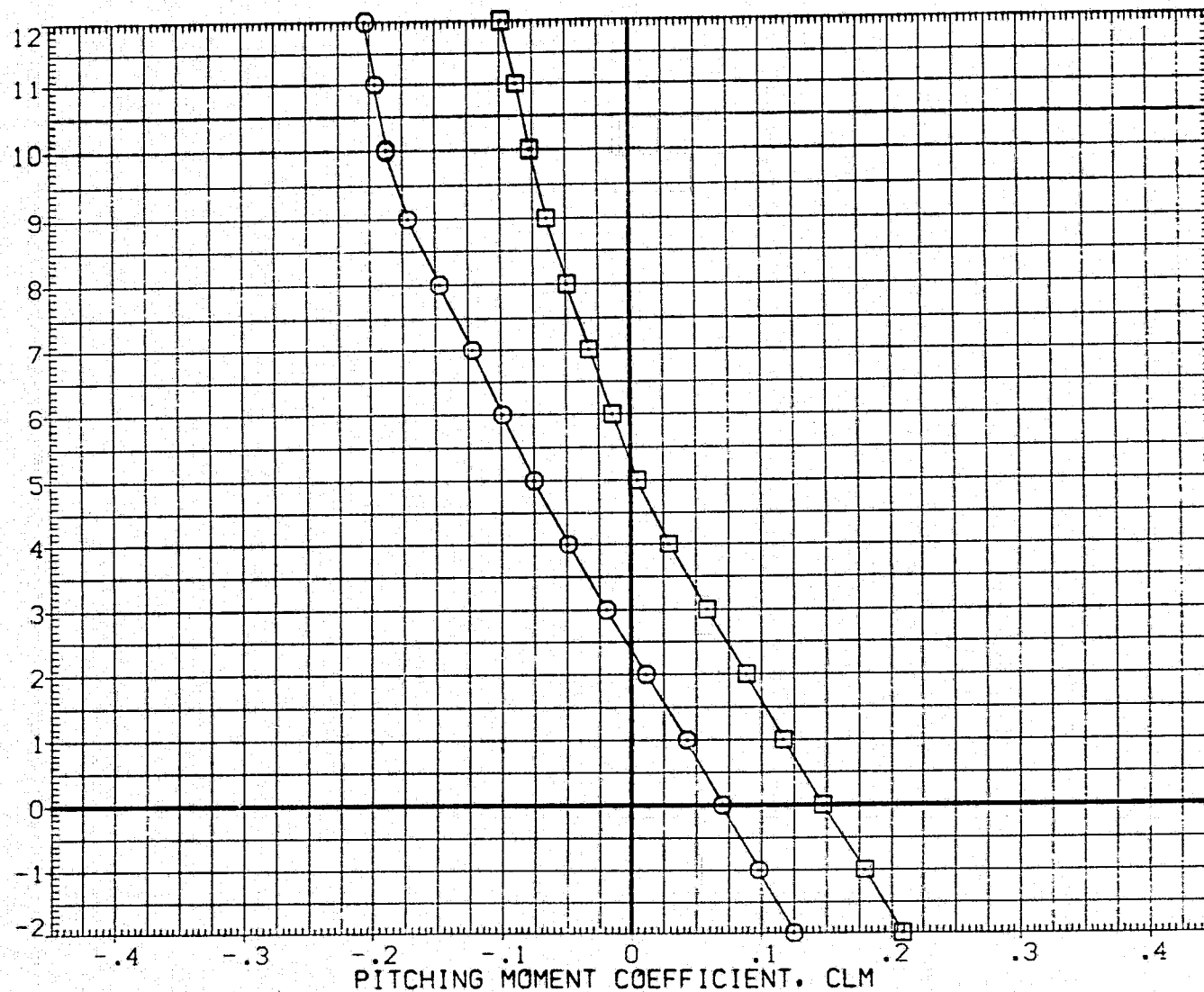


FIG.221 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH CONFIGURATION

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM117)	CA5 K1 FD H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	4.000	.000
(RGM126)	CA5 K1 FD H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )	-2.000	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

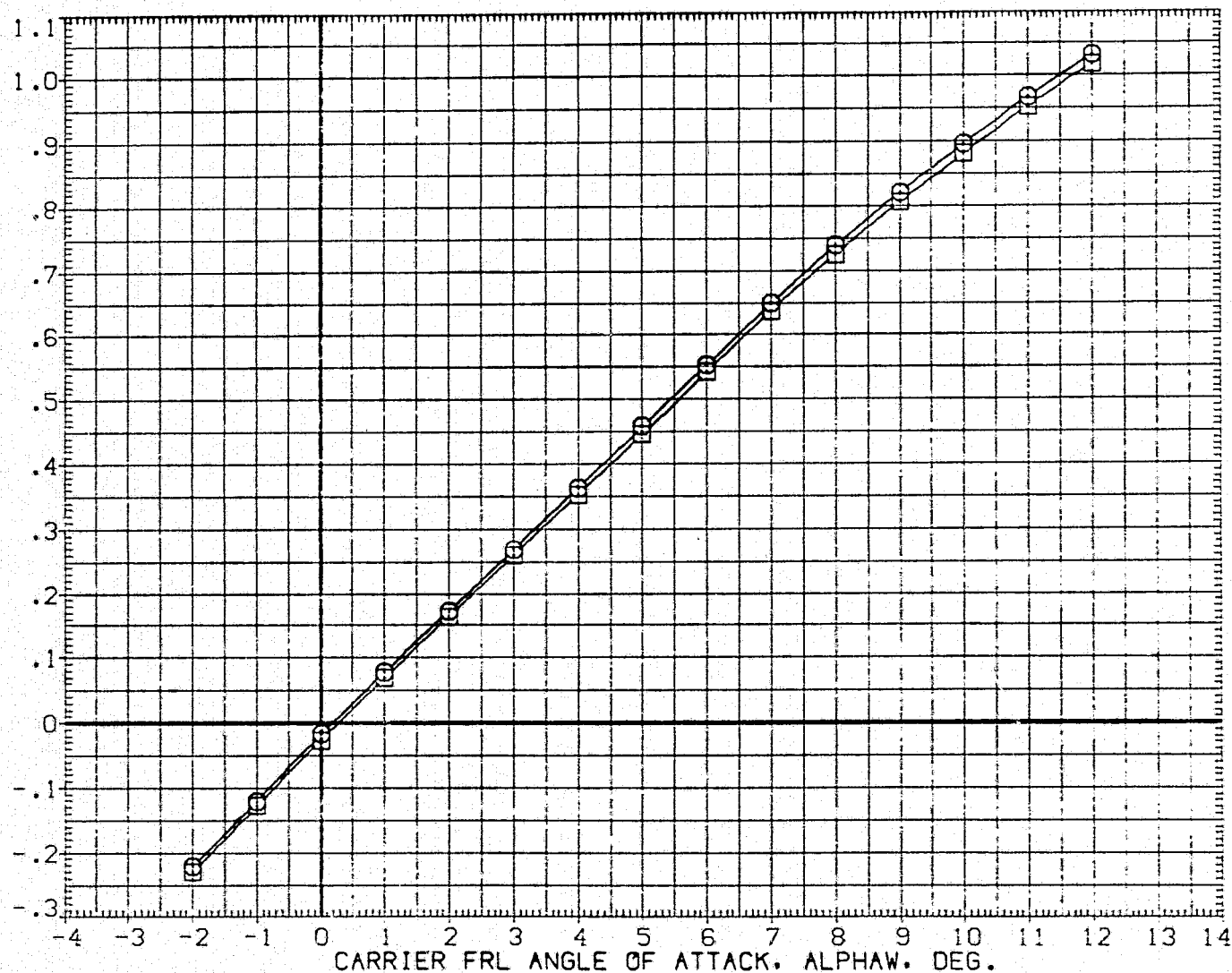


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RSM17) ☐ CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )  
 (RSM126) ☐ CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )

STAB 10RB SS-6  
 -2.000 4.000 .000  
 -2.000 4.000 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

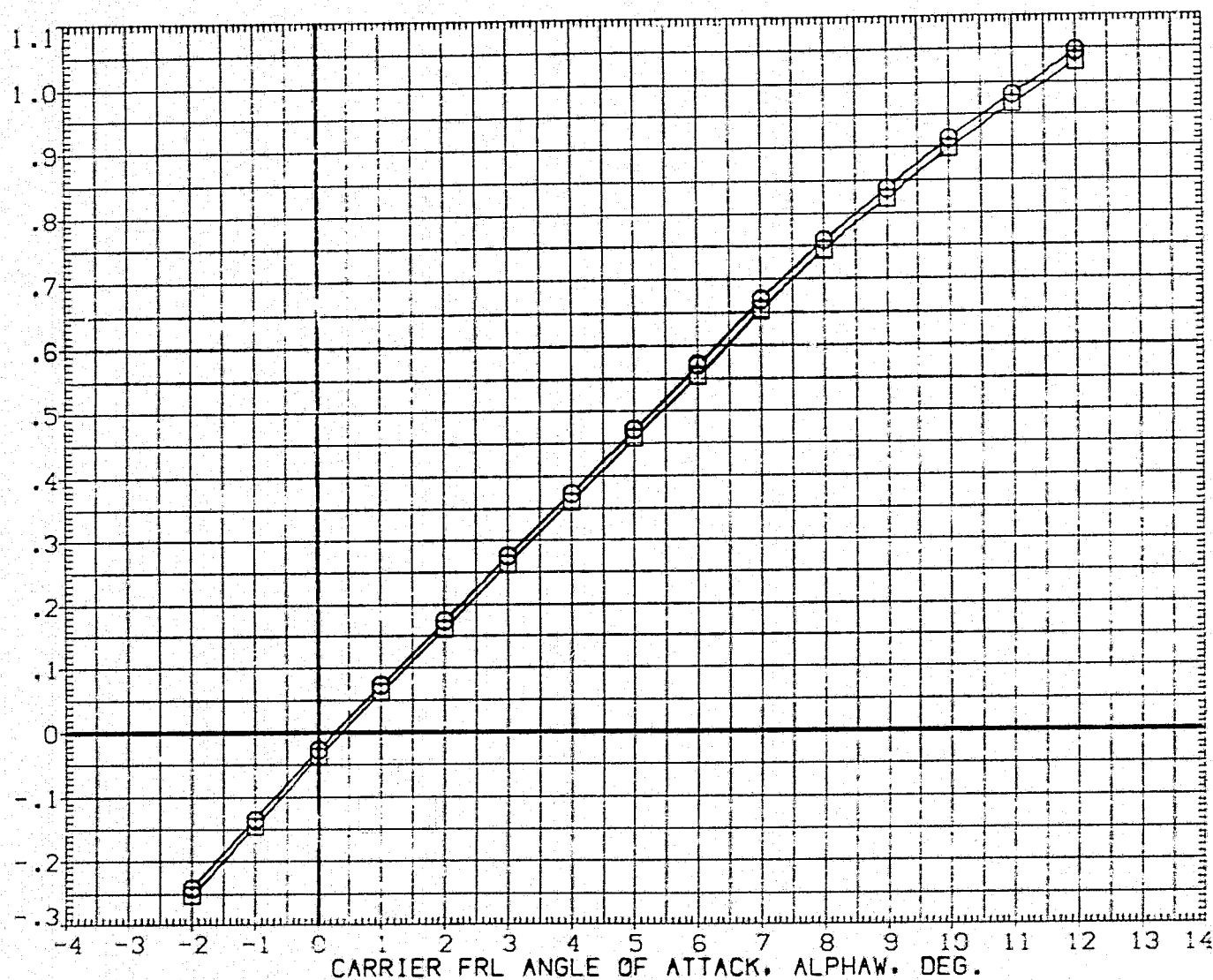


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(B)MACH = .50

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM117)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	4.000	.000
(RGM126)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3)	-2.000	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	50. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN.
YMRP	.0000	IN.
ZMRP	190.7500	IN.
SCALE	.0300	

LIFT COEFFICIENT, CL

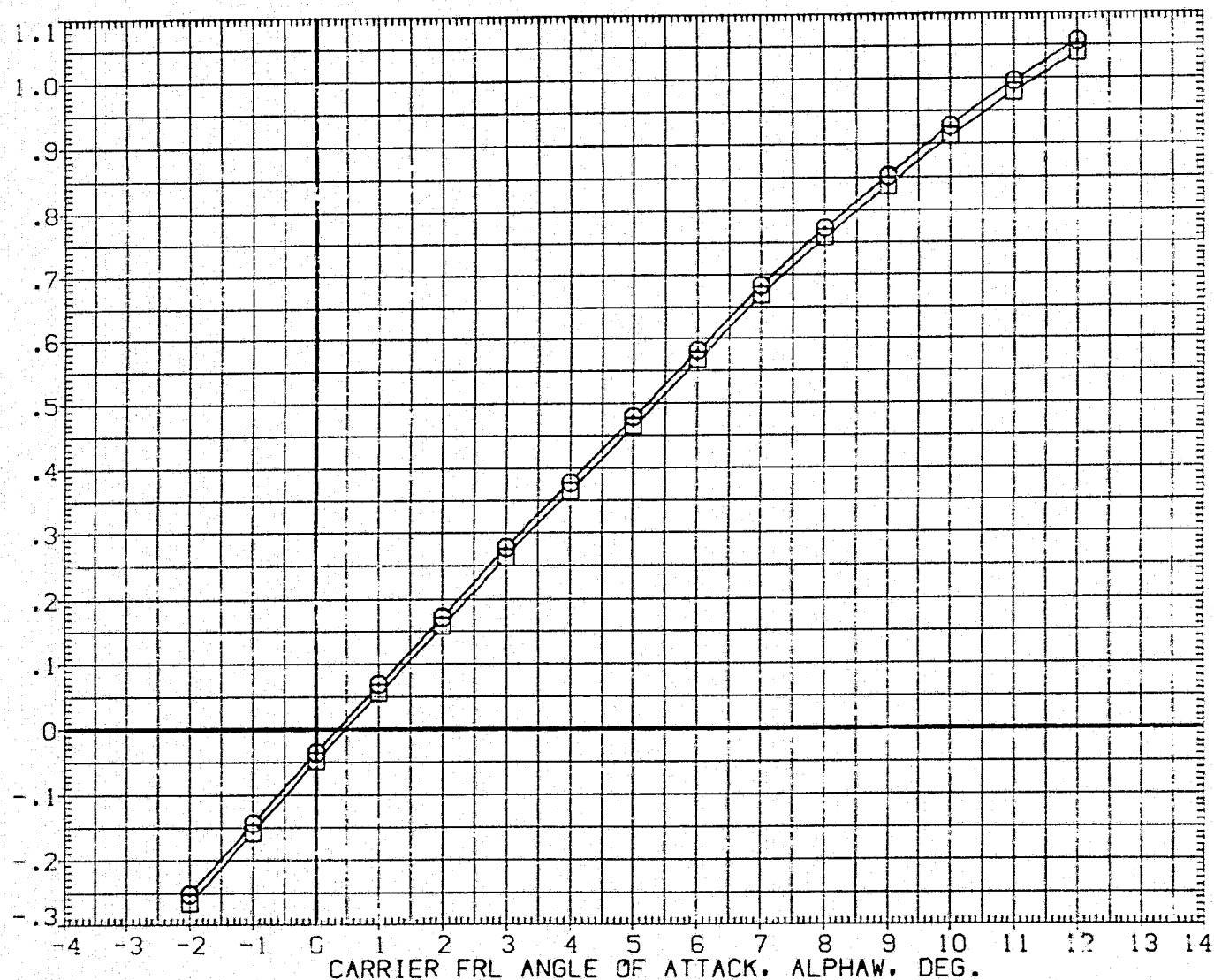


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION	
(R3M117)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	4.000	.000	SREF	5500.0000 SQ. FT.
(RGM126)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )	-2.000	4.000	.000	LREF	327.8000
					BREF	2348.0000
					XMRP	1339.9100
					YMRP	.0000
					ZMRP	190.7500
					SCALE	.0300

LIFT COEFFICIENT, CL

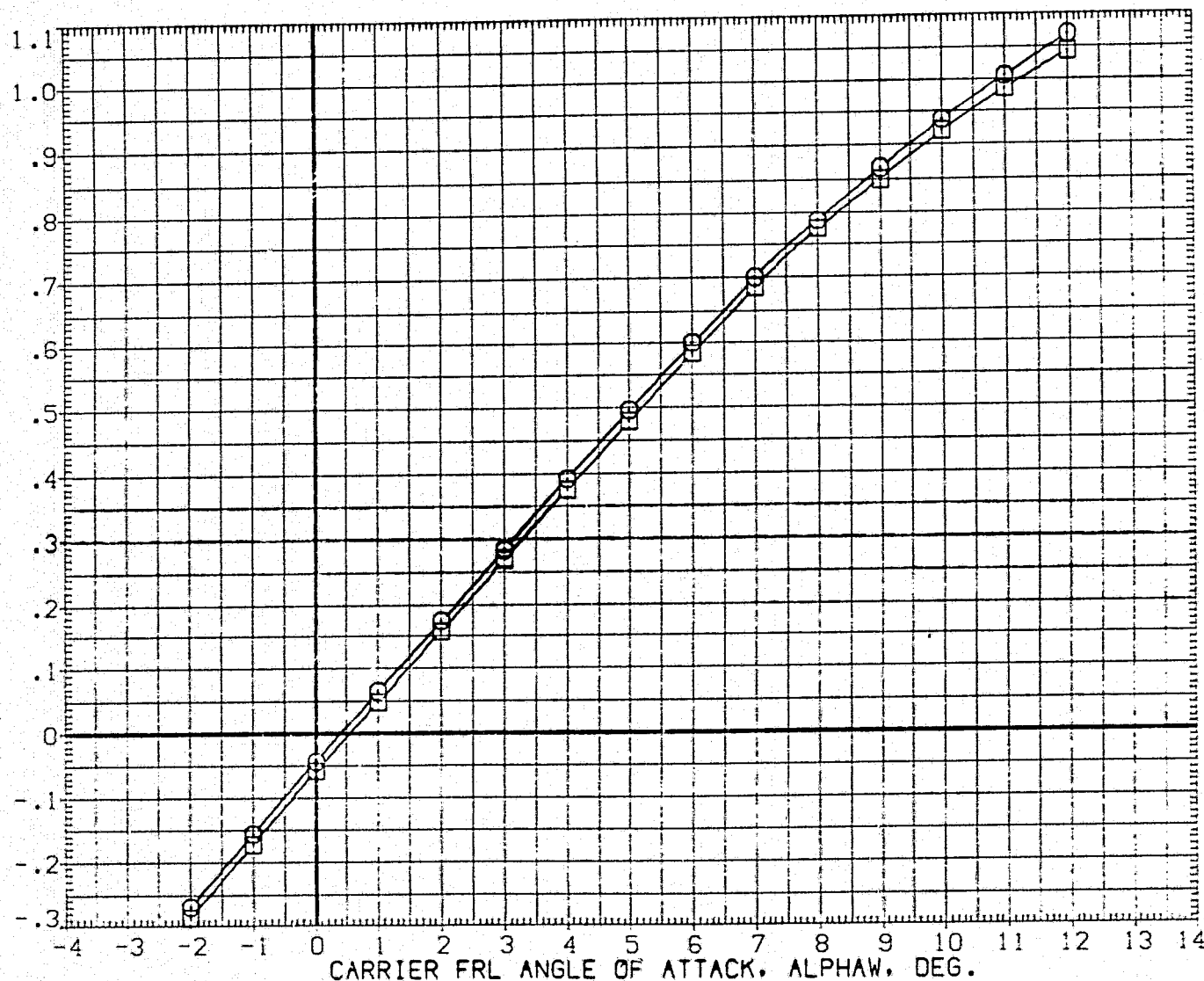


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM117)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	-2.000	4.000	.000
(RGM126)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3)	-2.000	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

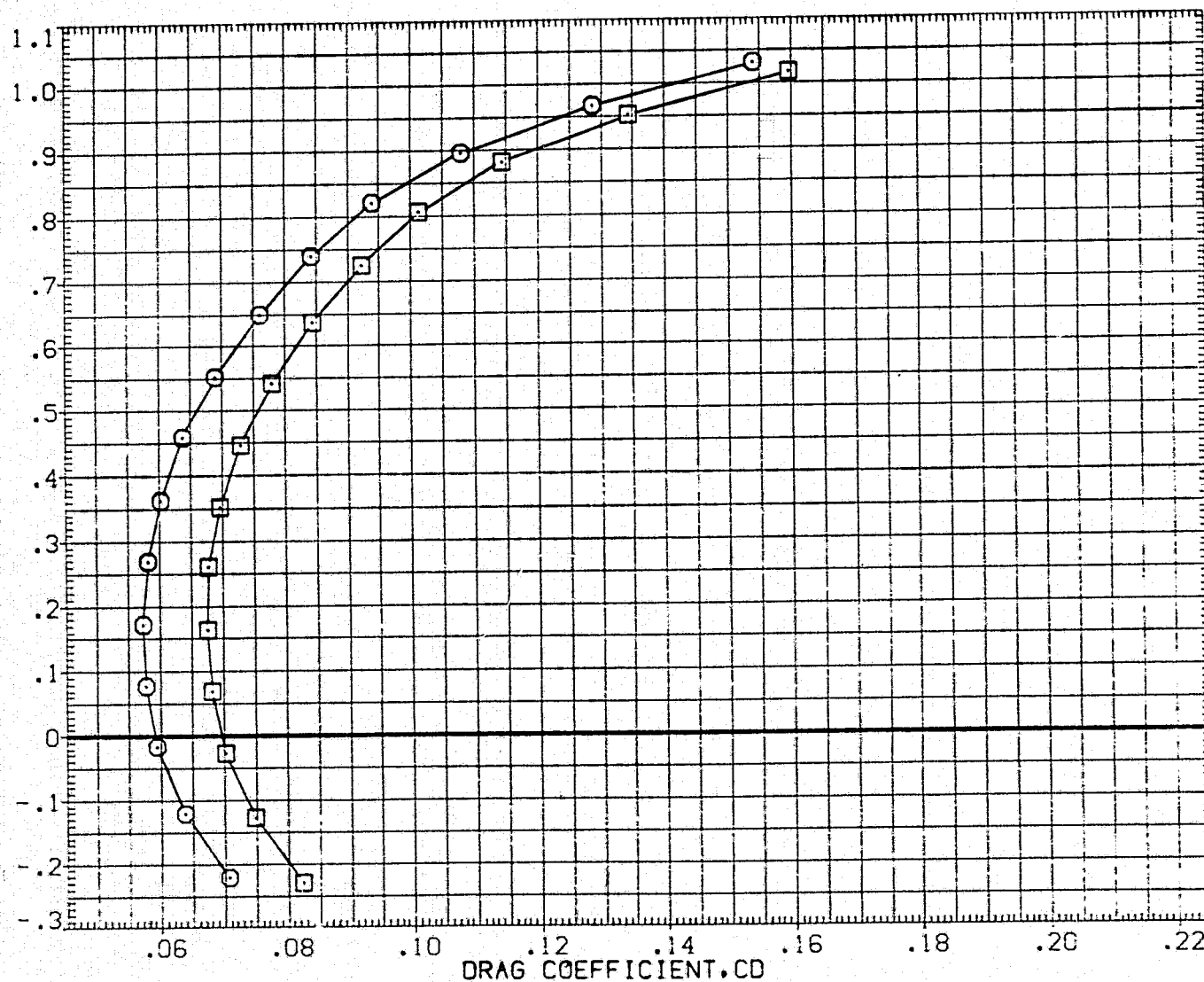


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM117)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM126)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )

STAB 10RB SS-6  
 -2.000 4.000 .000  
 -2.000 4.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

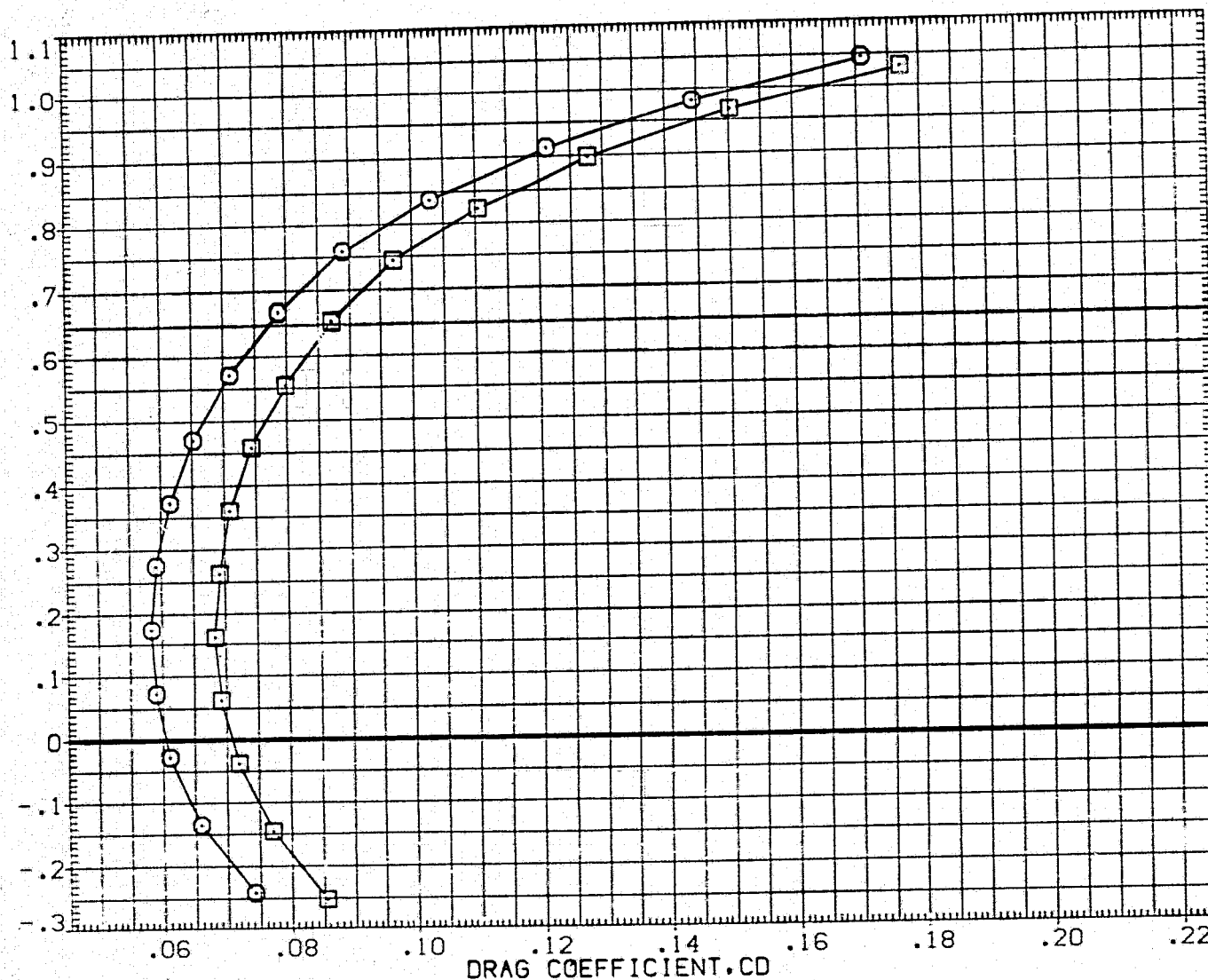


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(B)MACH .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	4.000	.000
(RGM126)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3)	-2.000	4.000	.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

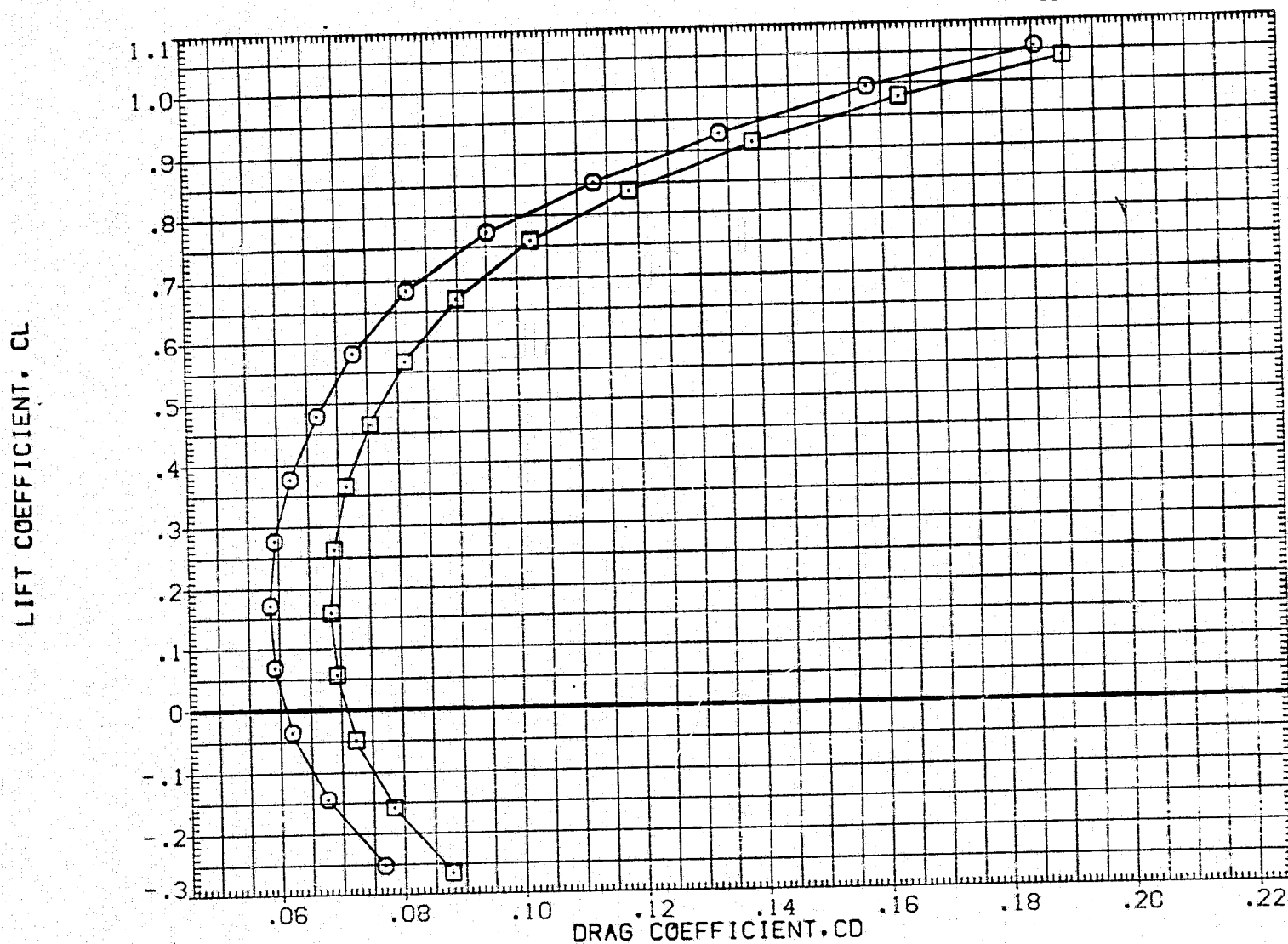


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM117)  $\bigcirc$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM126)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )

STAB

IORB

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

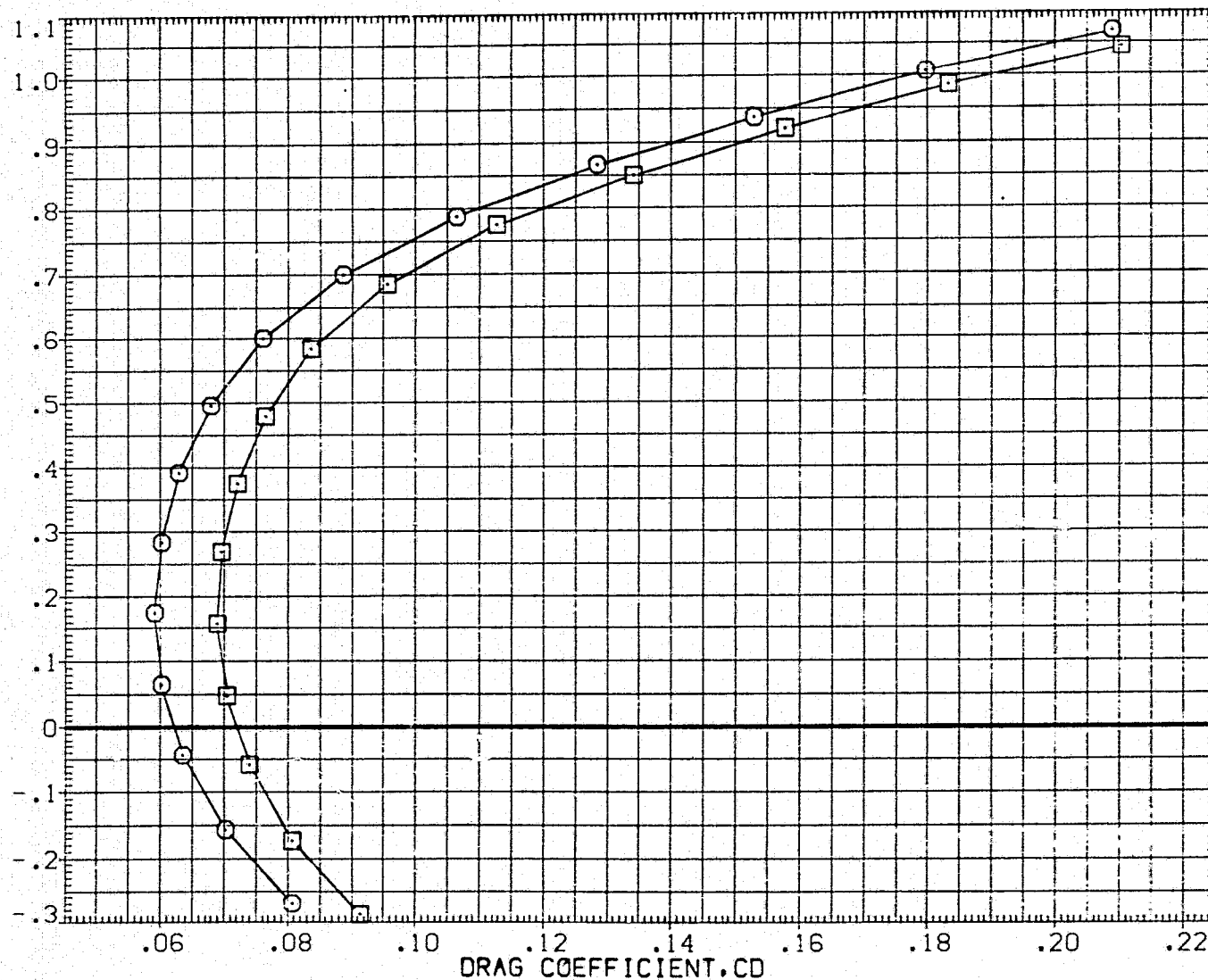


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(D)MACH = .70

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RSM117)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )

(RSM126)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )

STAB

-2.000

IORB

4.000

SS-6

.000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.

LREF 327.8000 IN.

BREF 2348.0000 IN.

YMRP 1339.9100 IN. XC

ZMRP .0000 IN. YC

ZMRP 190.7500 IN. ZC

SCALE .0300

LIFT COEFFICIENT, CL

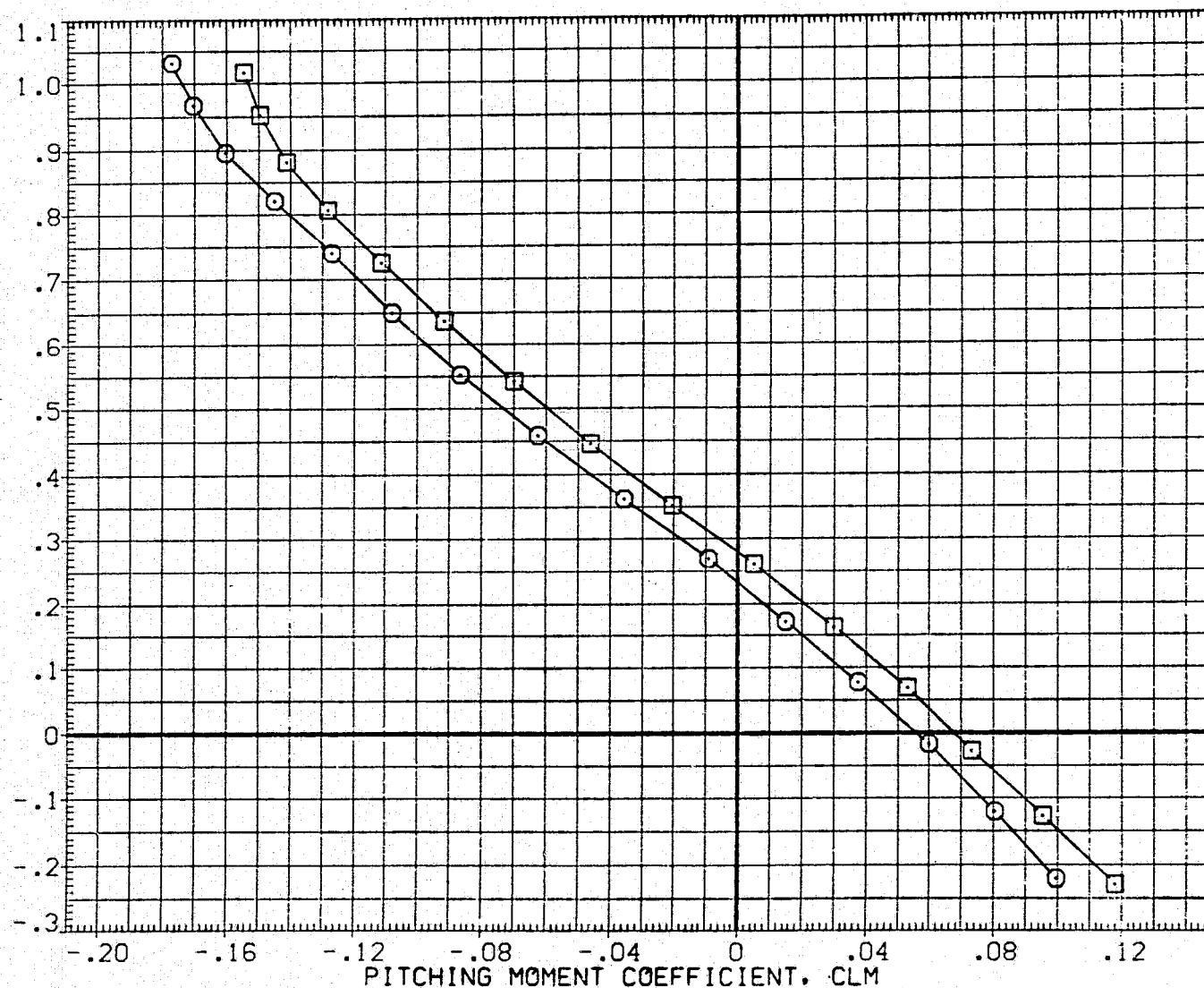


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM117) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM126) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )

STAB

-2.000  
-2.000

IORB

4.000  
4.000

SS-6

.000  
.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

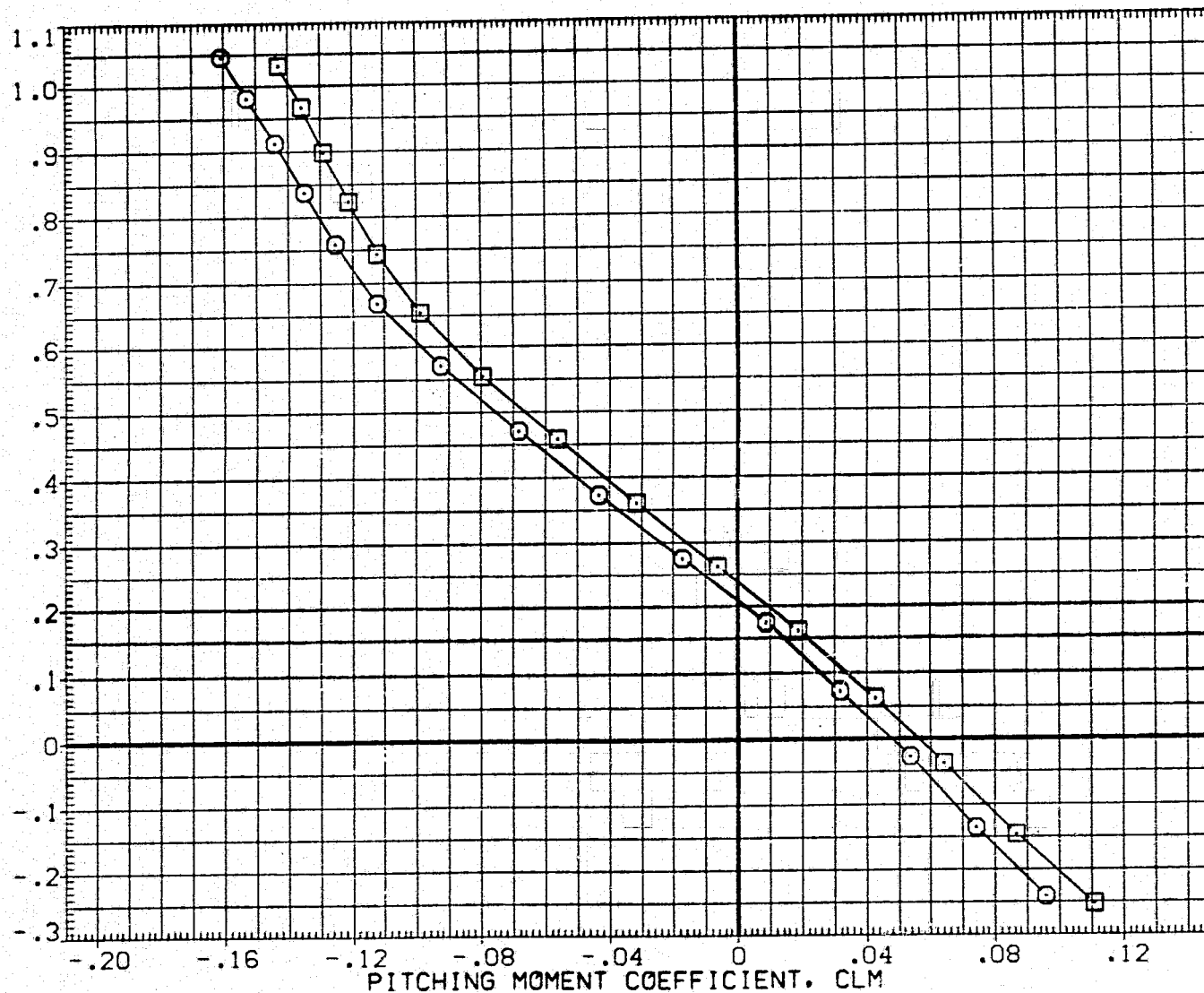


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	4.000	.000
(RGM126)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )	-2.000	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ-FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

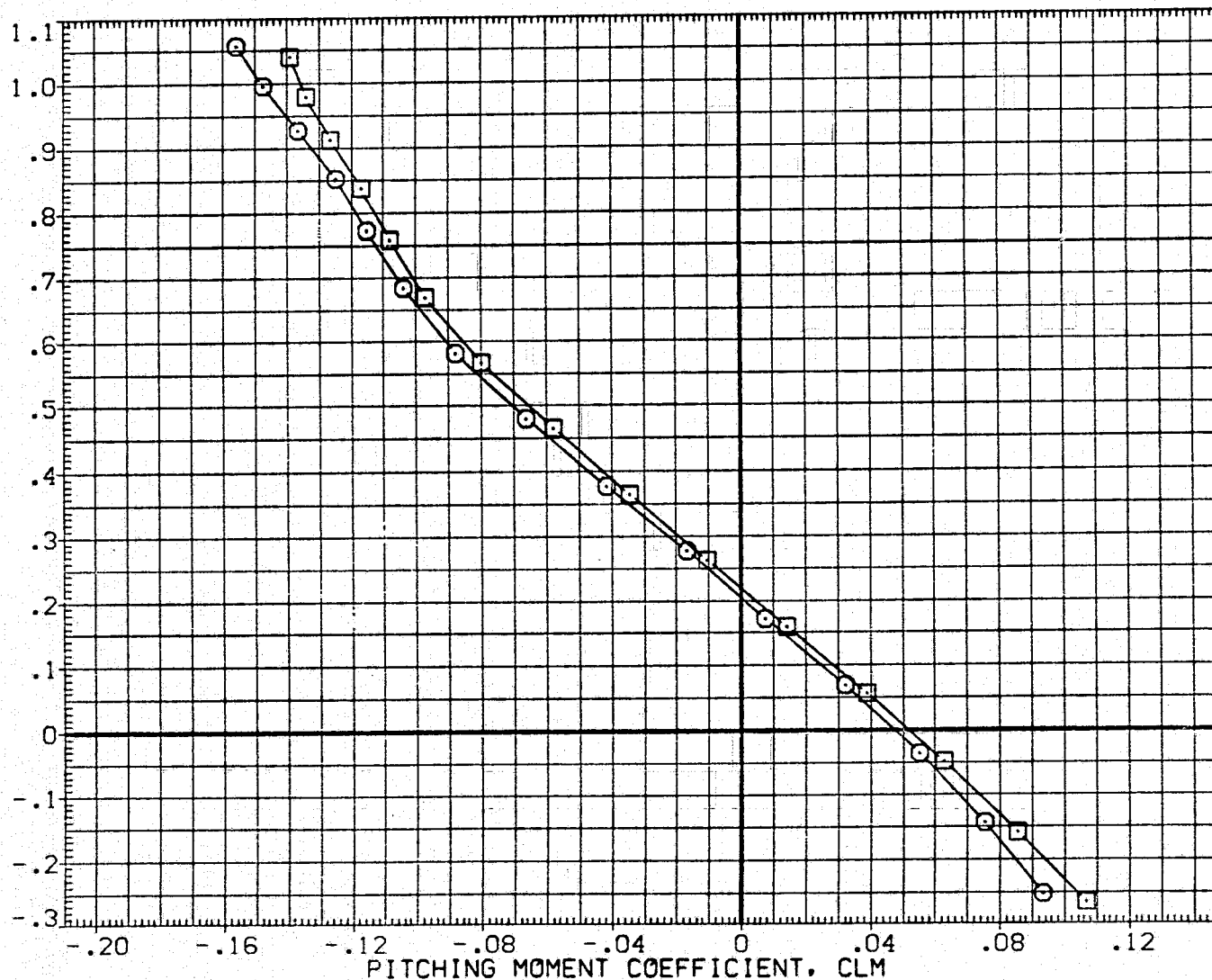


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ICRB	SS-6
(RGM117)	CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	4.000	.000
(RGM126)	CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )	-2.000	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

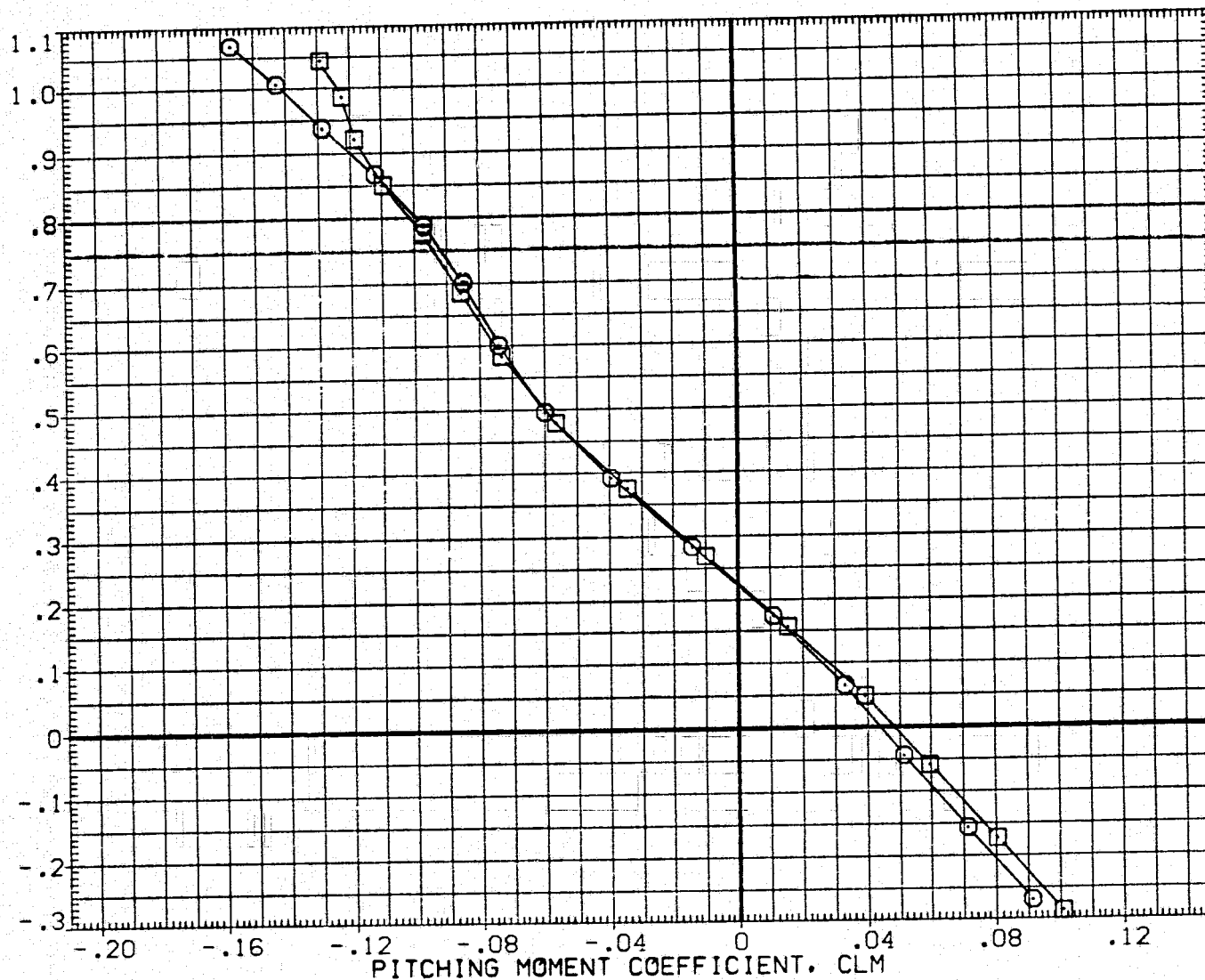


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM117)	CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	4.000	.000
(RGM126)	CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3)	-2.000	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XM RP	1339.9100	IN. XC
YM RP	.0000	IN. YC
ZM RP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

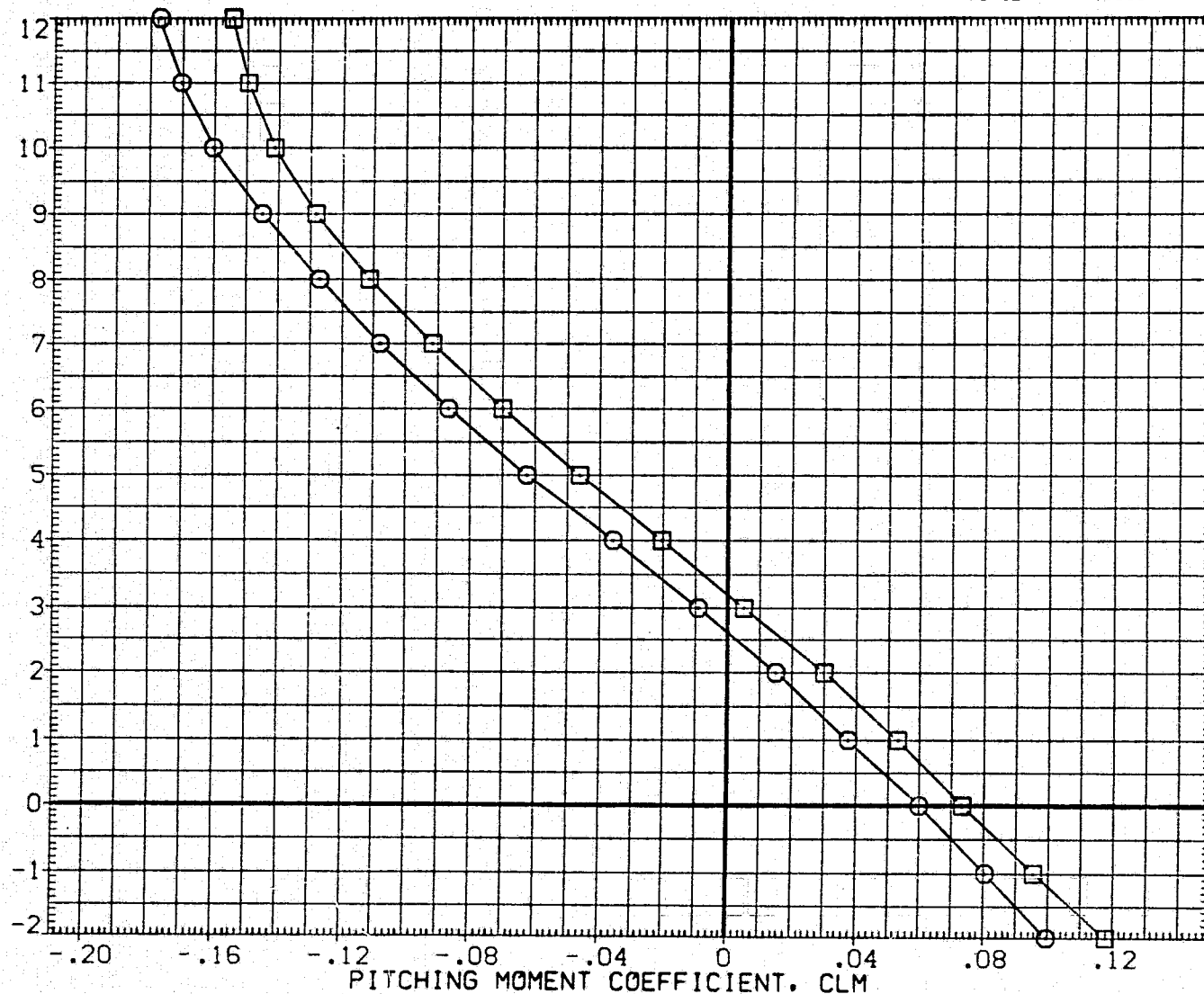


FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM117) ○	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM126) □	CAS K1 FO H15.6 V9.1 (PLUS. ORB N0Z AT38.3 )

STAB	IORB	SS-6
-2.000	4.000	.000
-2.000	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK. ALPHAW. DEG.

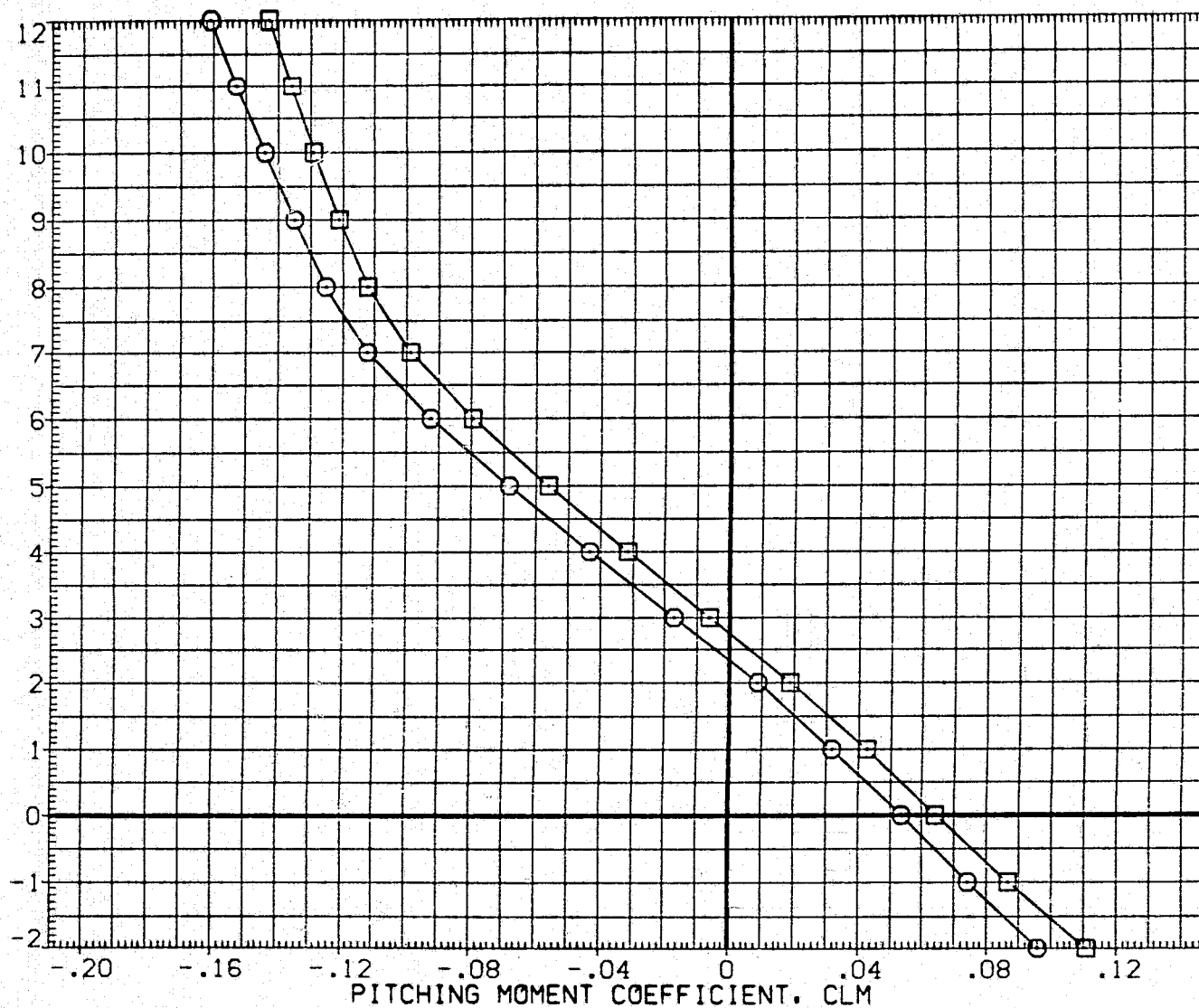


FIG.222 747+ORB(4 DEG). EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(B)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM117)	CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT39.3)	-2.000	4.000	.000
(RGM126)	CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3)	-2.000	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.



FIG.222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

STAB

IORB

SS-6

REFERENCE INFORMATION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(RSM117)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	-2.000	4.000	.000
(RSM126)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3)	-2.000	4.000	.000

REFERENCE INFORMATION	VALUE	UNIT
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

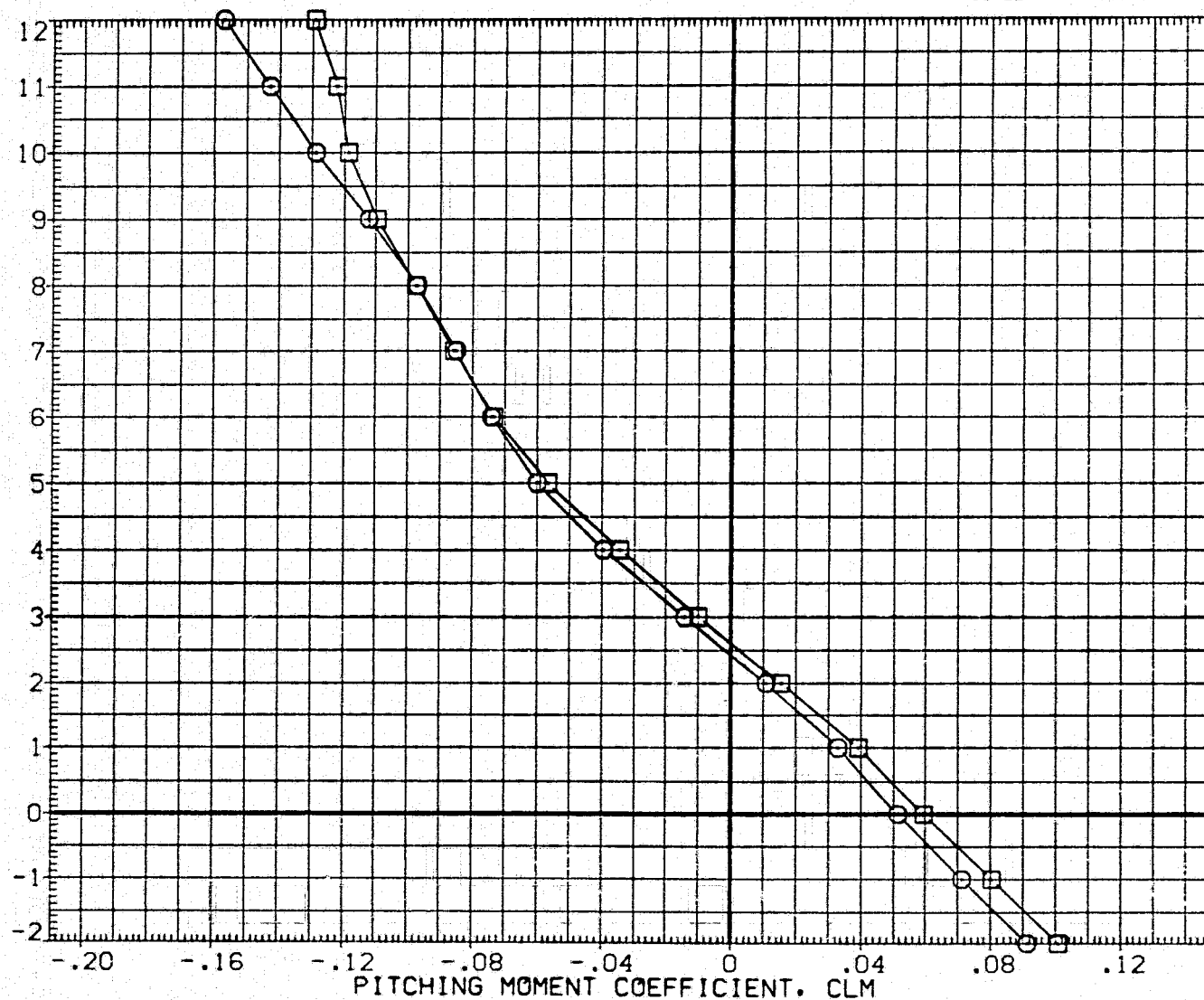


FIG. 222 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY CONFIG.

(D)MACH = .70

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGMO81)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGMO92)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB 10RB S5-6  
 1.000 7.850 20.000  
 1.000 7.850 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

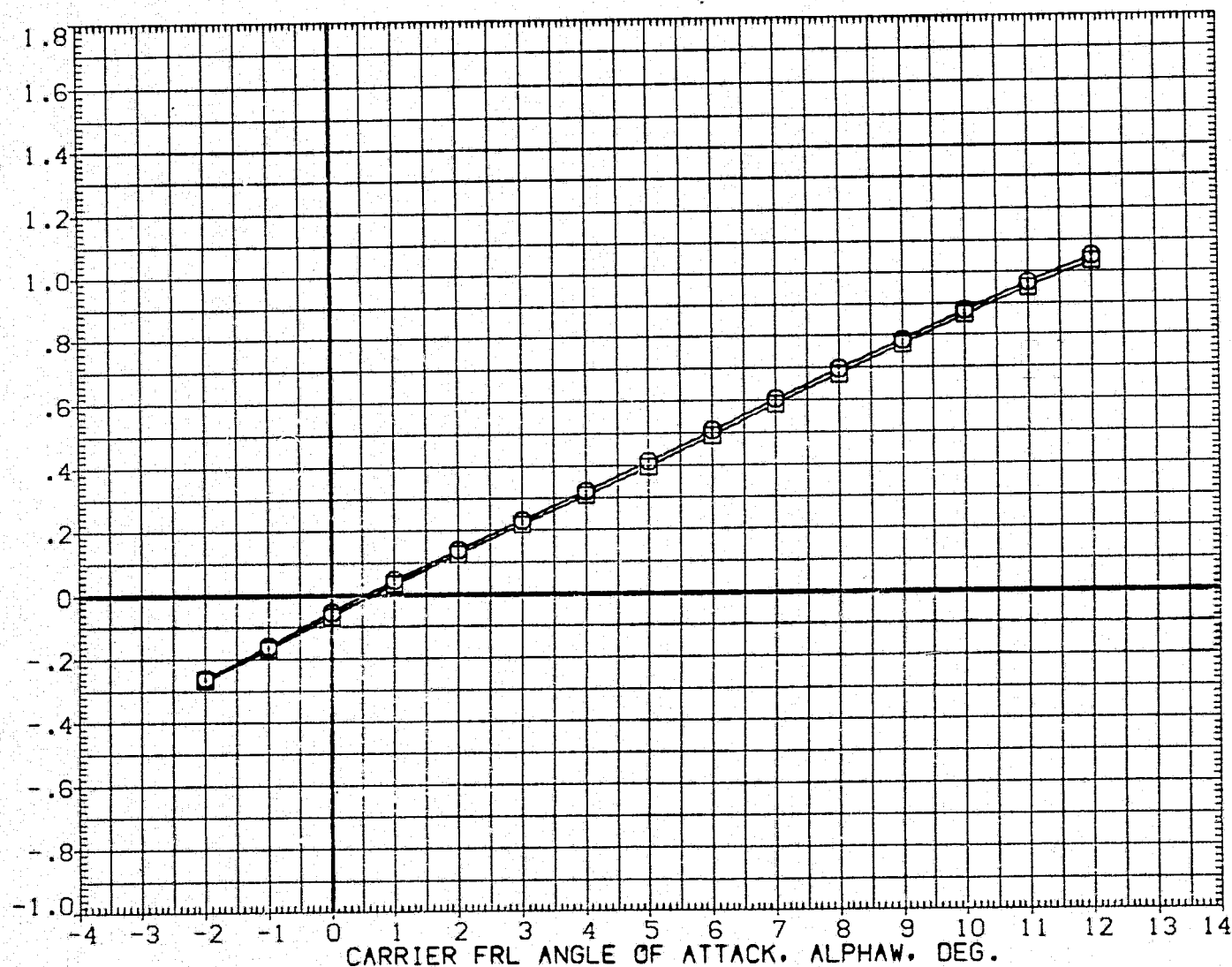




FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )  
 (RGM092)  CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB 10RB S5-6  
 1.000 7.850 20.000  
 1.000 7.850 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

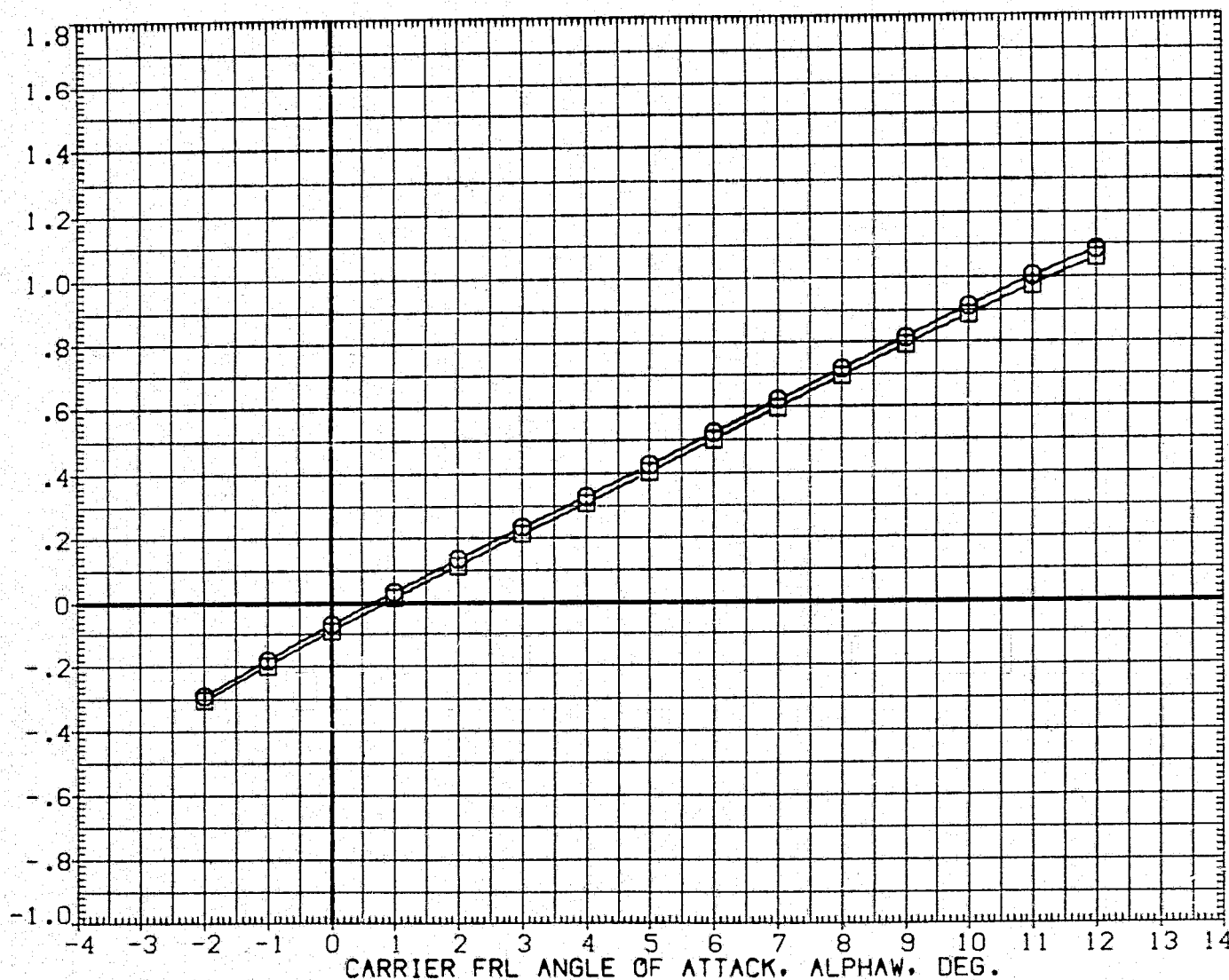
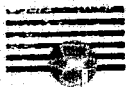


FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(B)MACH = .50

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION	
(R3M081)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	7.850	20.000	SREF	5500.0000 SQ.FT.
(R3M092)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	7.850	20.000	LREF	327.8000 IN.
					BREF	2348.0000 IN.
					YMRP	1339.9100 IN. XC
					ZMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

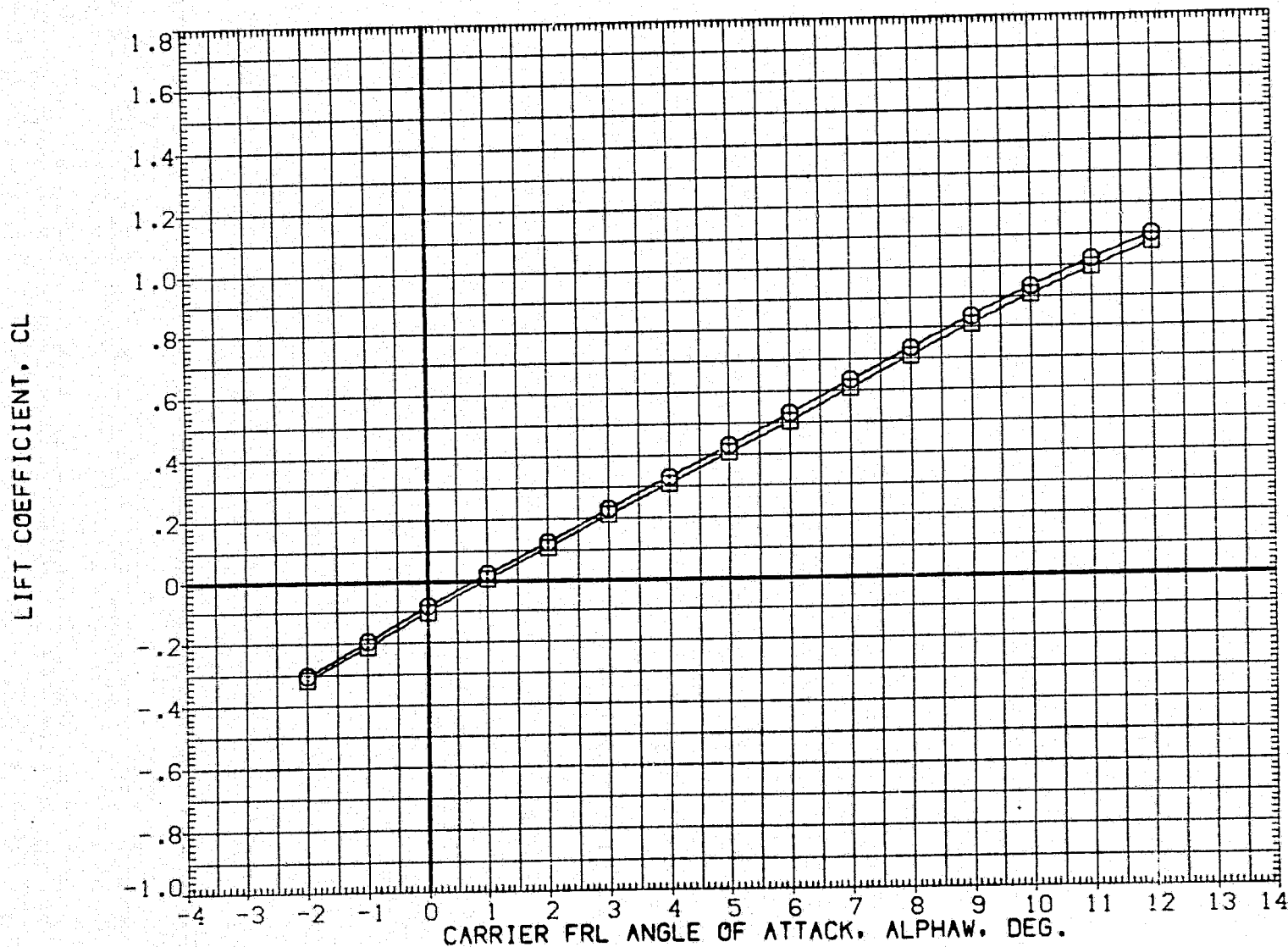


FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM081)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	7.850	20.000
(RGM092)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	1.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	50. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

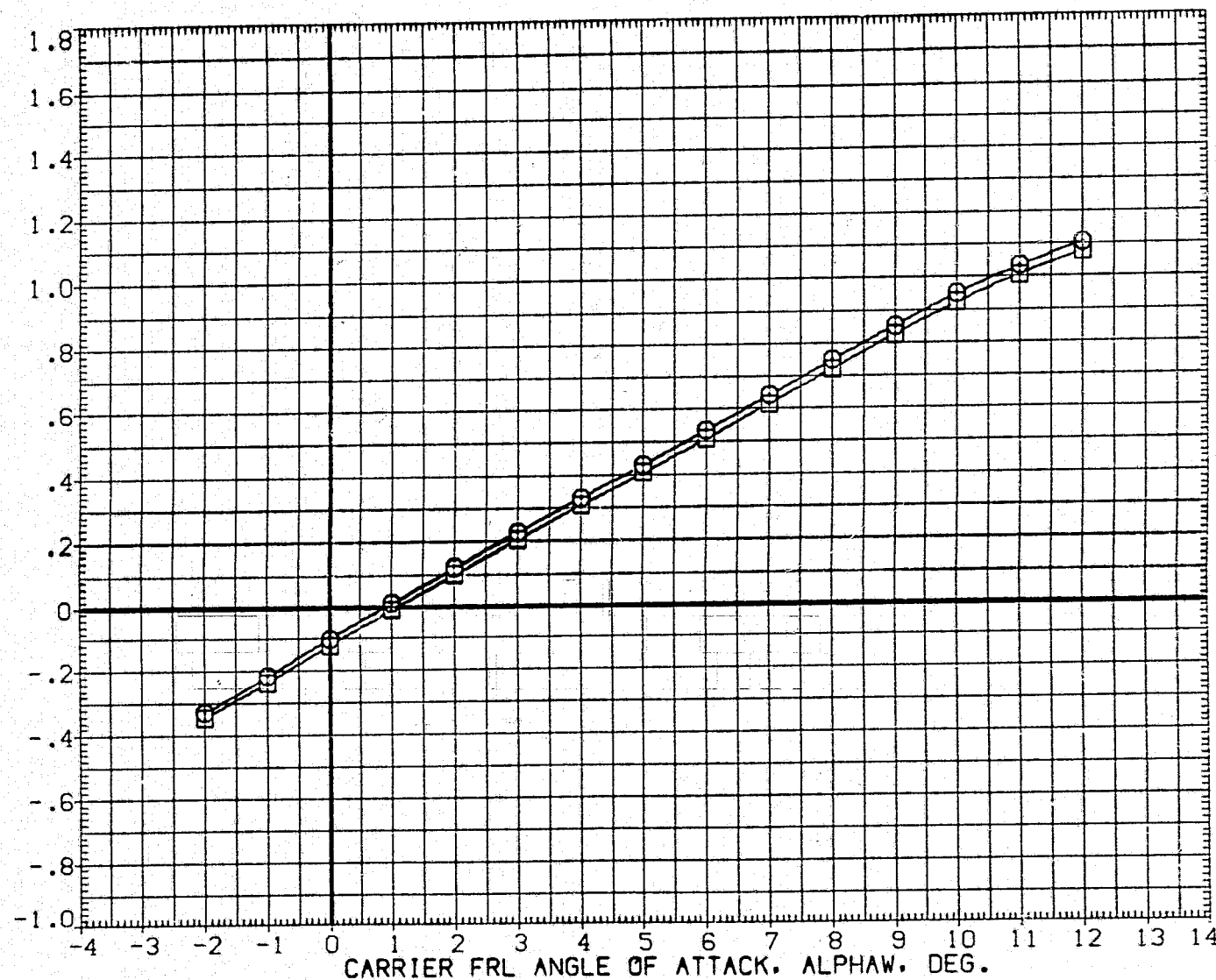


FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(RGM081)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	7.850	20.000
(RGM092)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	7.850	20.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

LIFT COEFFICIENT, CL

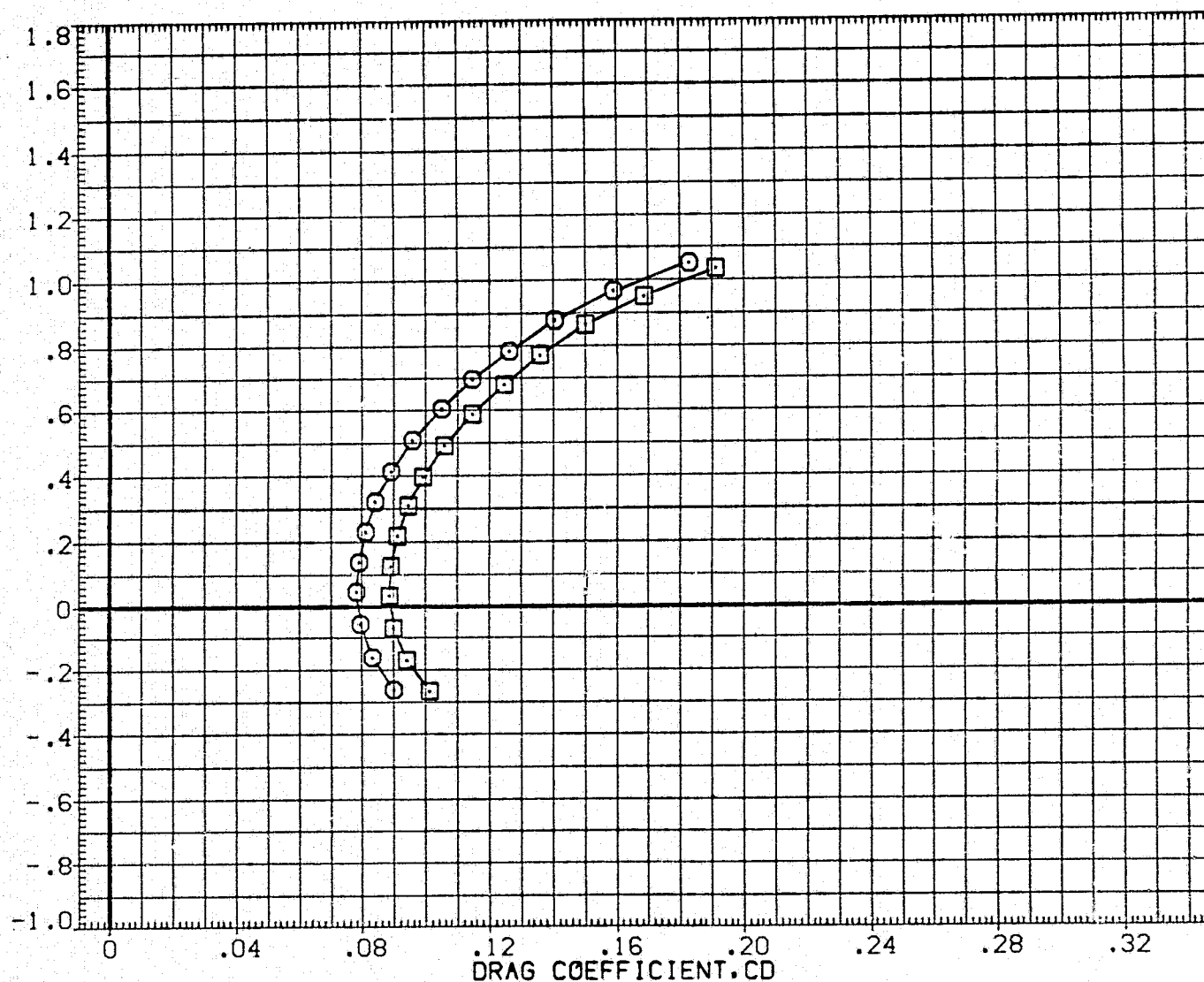


FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\bigcirc$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )  
 (RGM092)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB

IORB

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

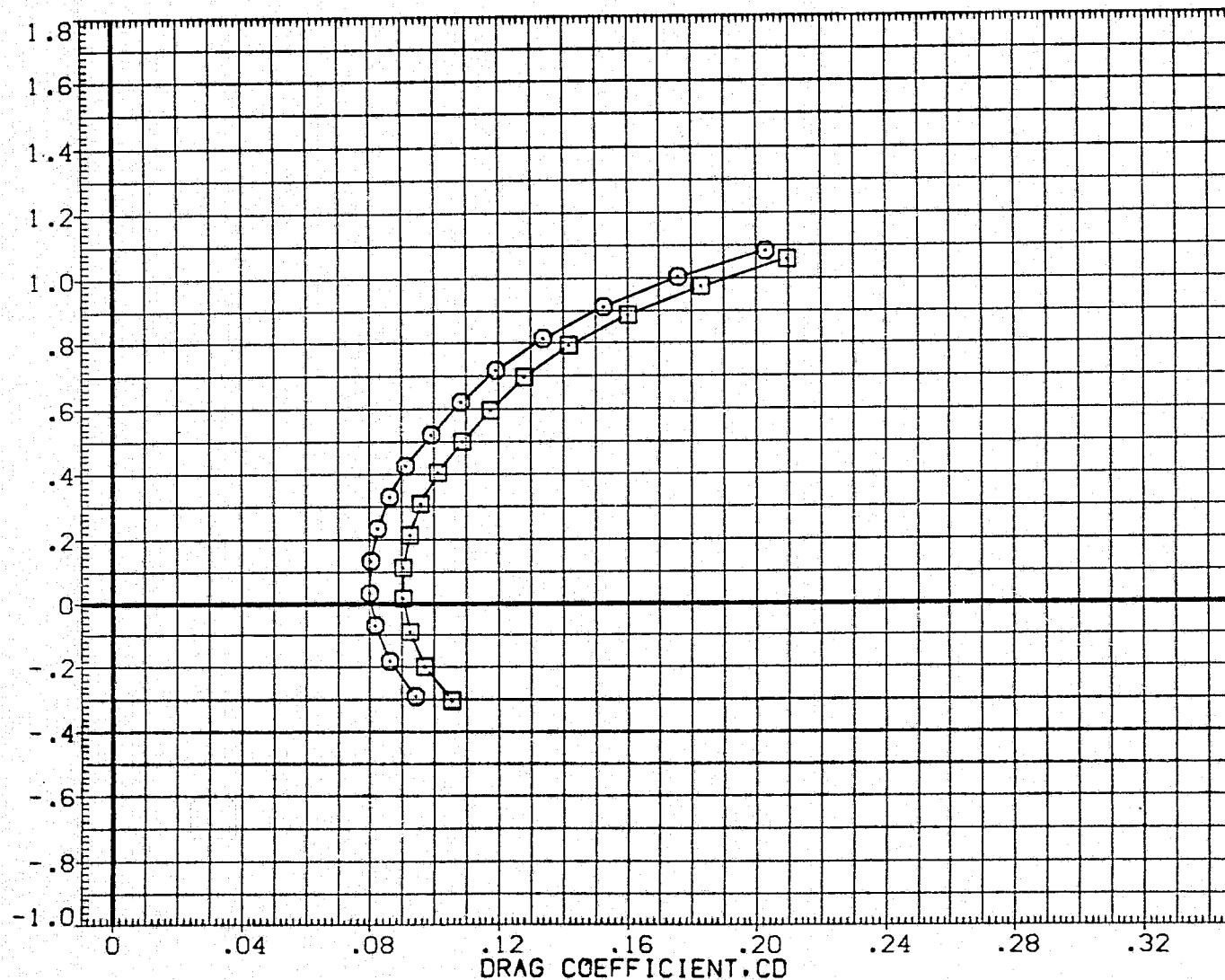


FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(B)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM081) ○	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	7.850	20.000
(RGM092) □	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

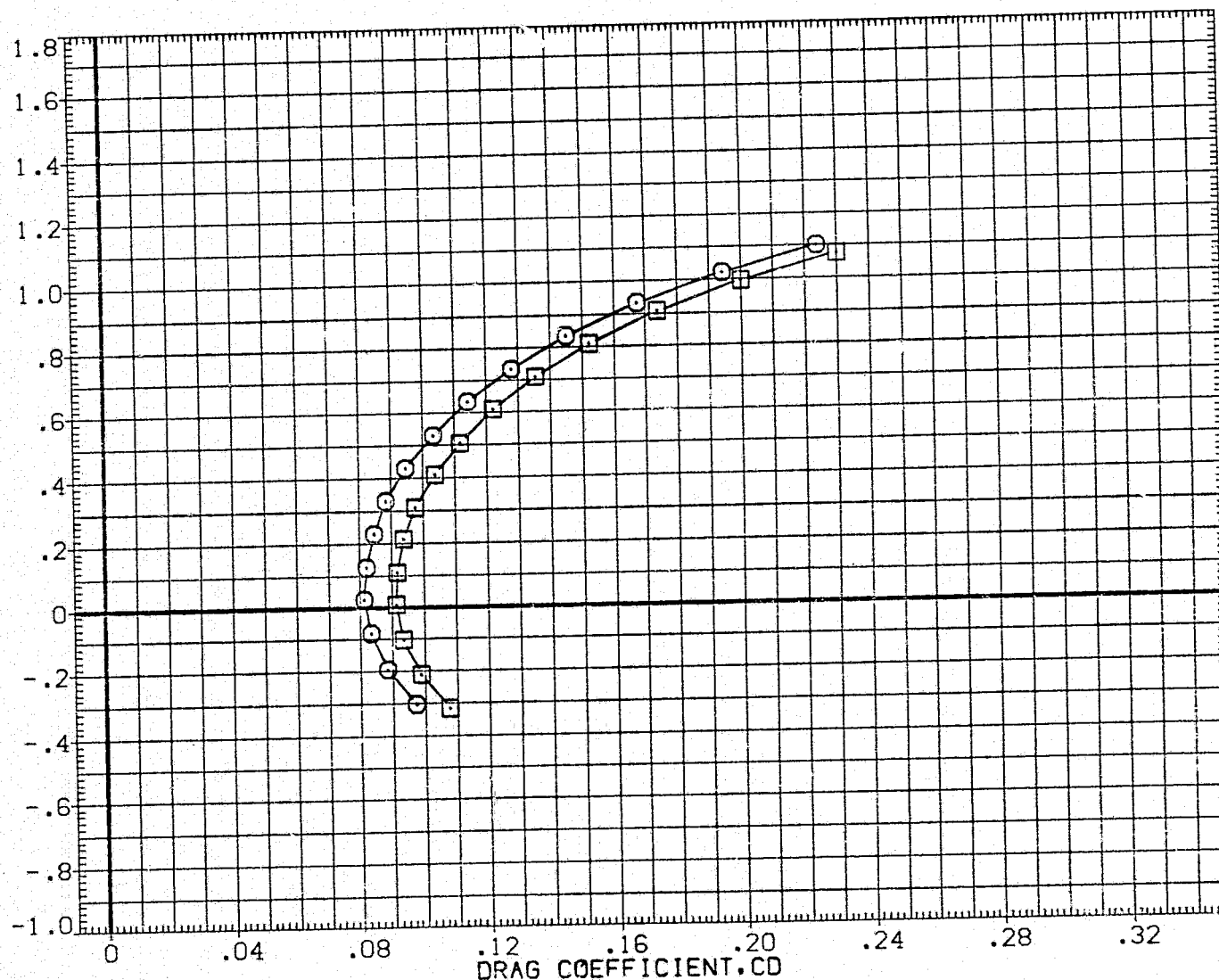


FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.  
(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

{RGM081} CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )  
 {RGM092} CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB

IORB

S5-6

1.000 7.850 20.000  
 1.000 7.850 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

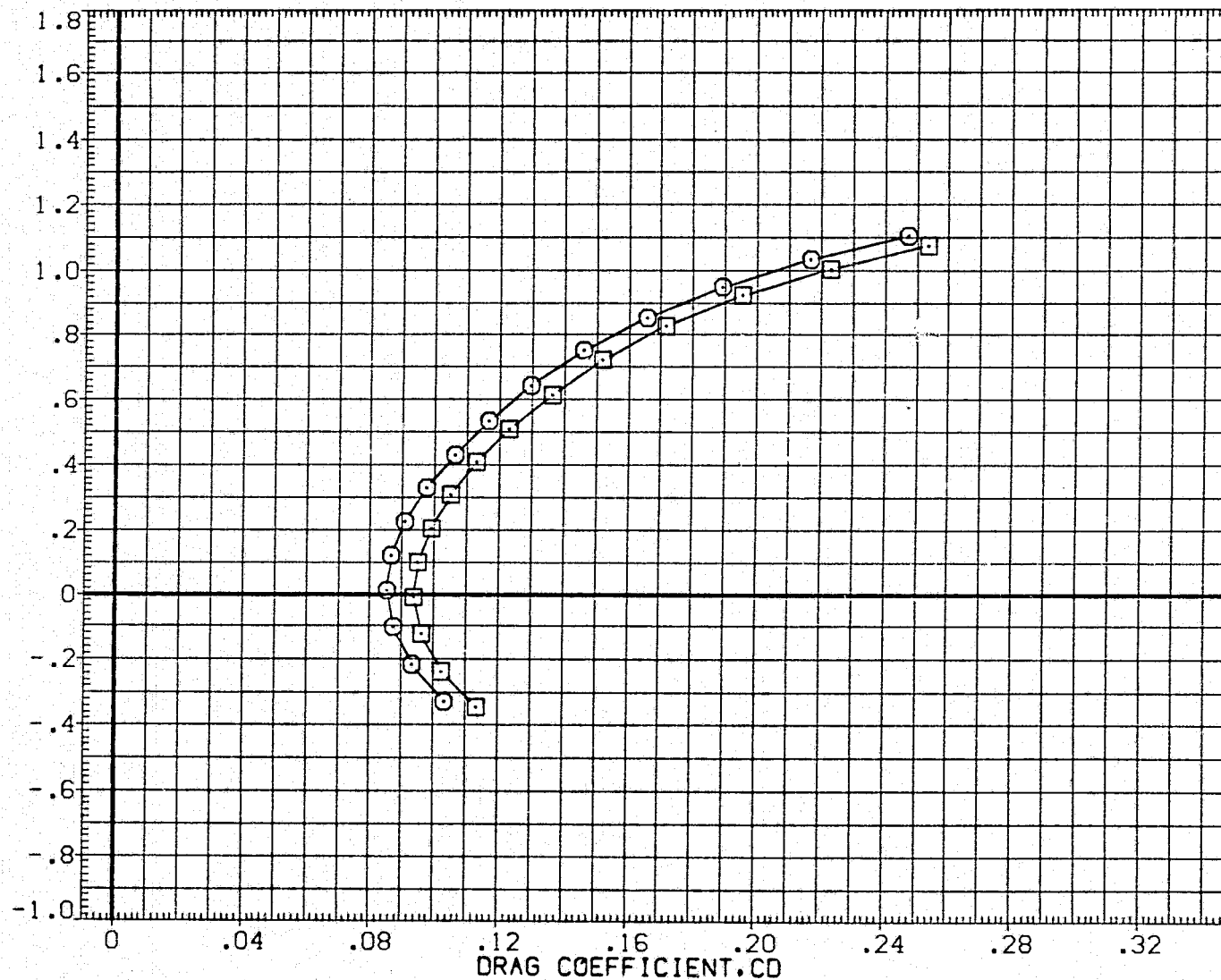


FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM092)  $\square$  CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB 10RB S5-E  
 1.000 7.850 20.000  
 1.000 7.850 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL



FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081) ☐ CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM092) ☐ CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB

IORB

S5-6

1.000 7.850 20.000  
 1.000 7.850 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL



FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM081) ○	CAS K1 FD H15.6 V9.1 (PLUS. ORB TC5 AT38.2)
(RGM092) □	CAS K1 FD H15.6 V9.1 (PLUS. ORB NOZ AT38.2)

STAB	IORB	S5-6
1.000	7.850	20.000
1.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

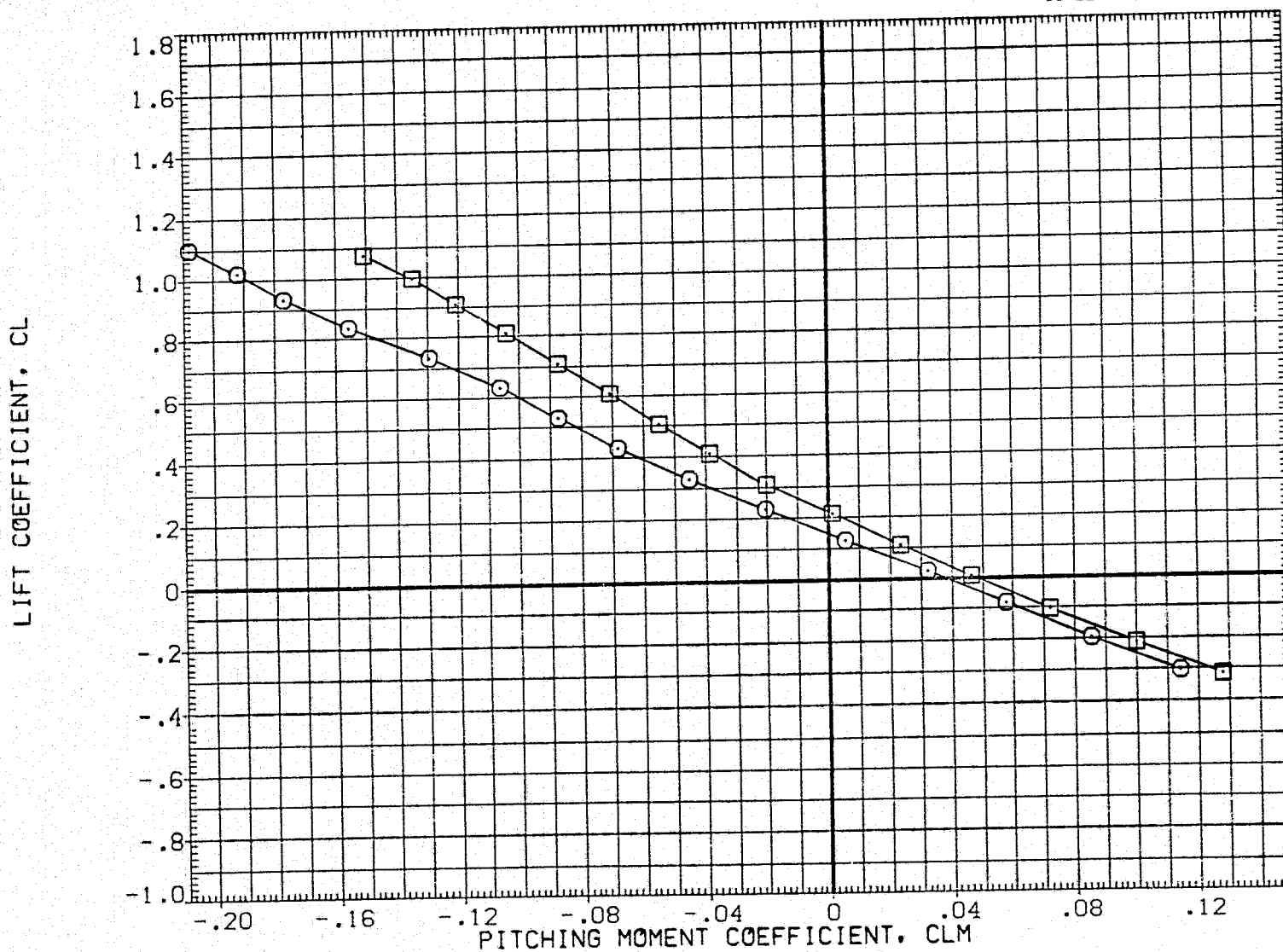


FIG.223 747+ORB(8 DEG). EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.  
(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM081)	CA5 K1 F0 H15.6 V9.1 (PLUS. ORB TCS AT38.2)	1.000	7.850	20.000
(RGM092)	CA5 K1 F0 H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	1.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

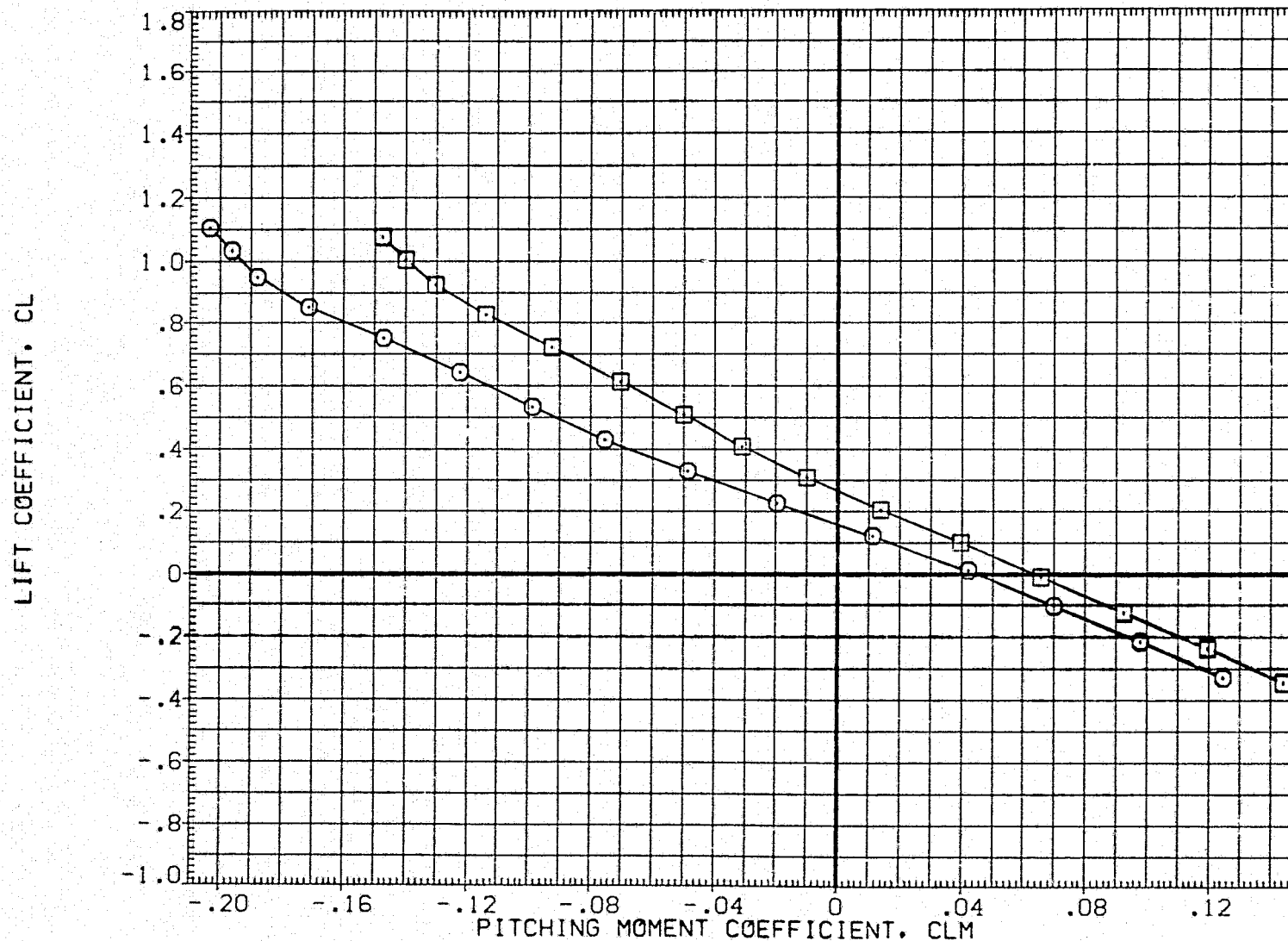


FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 ) 1.000 7.850 20.000  
 (RGM092)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 ) 1.000 7.850 20.000

STAB 10RB S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRF 1339.9100 IN. XC  
 YMRF .0000 IN. YC  
 ZMRF 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

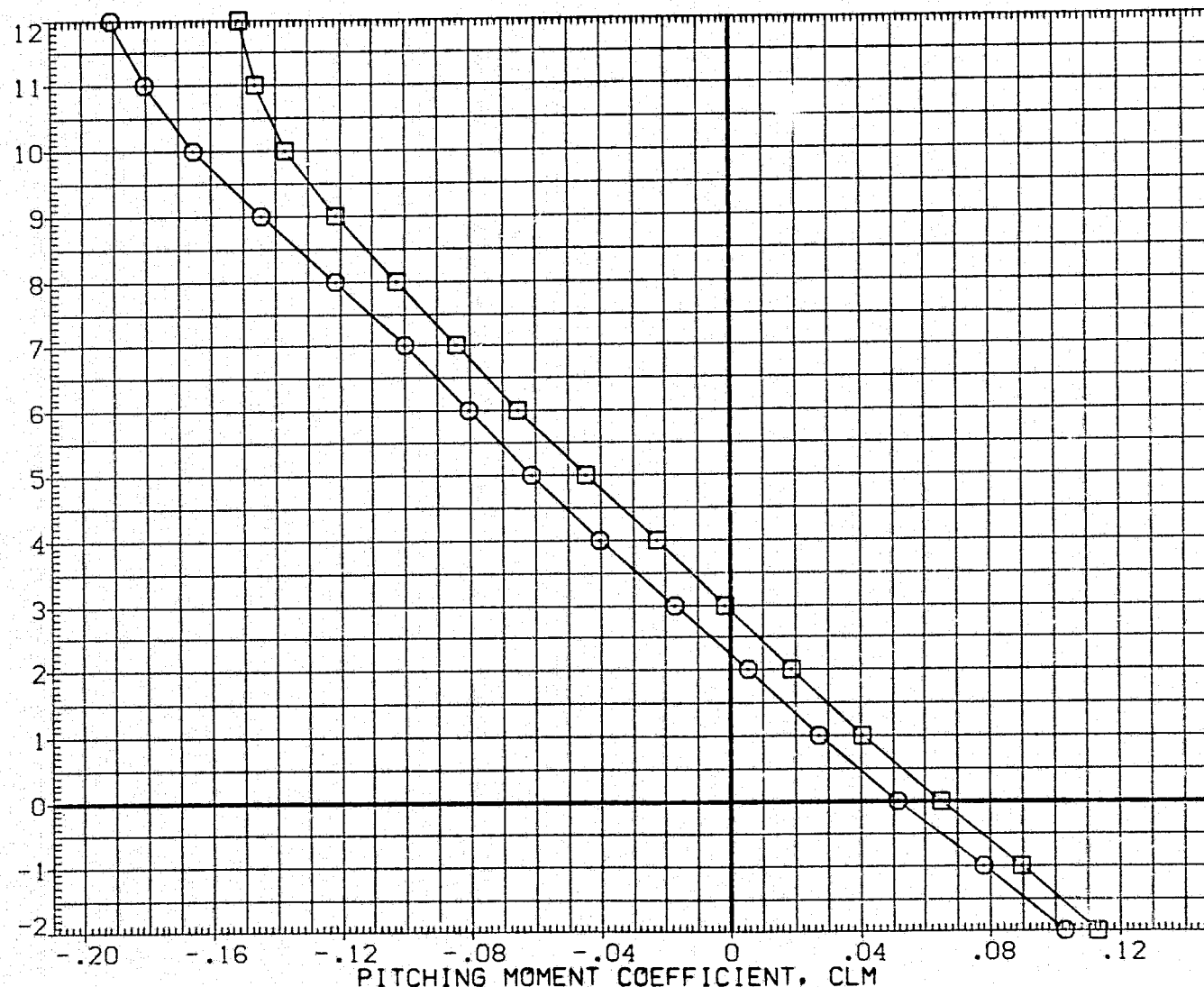


FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)	○	CAS	K1	FO	H15.6	V9.1	(PLUS. ORB TC5 AT38.2 )
(RGM092)	□	CAS	K1	FO	H15.6	V9.1	(PLUS. ORB NOZ AT38.2 )

STAB

IORB

SS-6

1.000	7.850	20.000
1.000	7.850	20.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

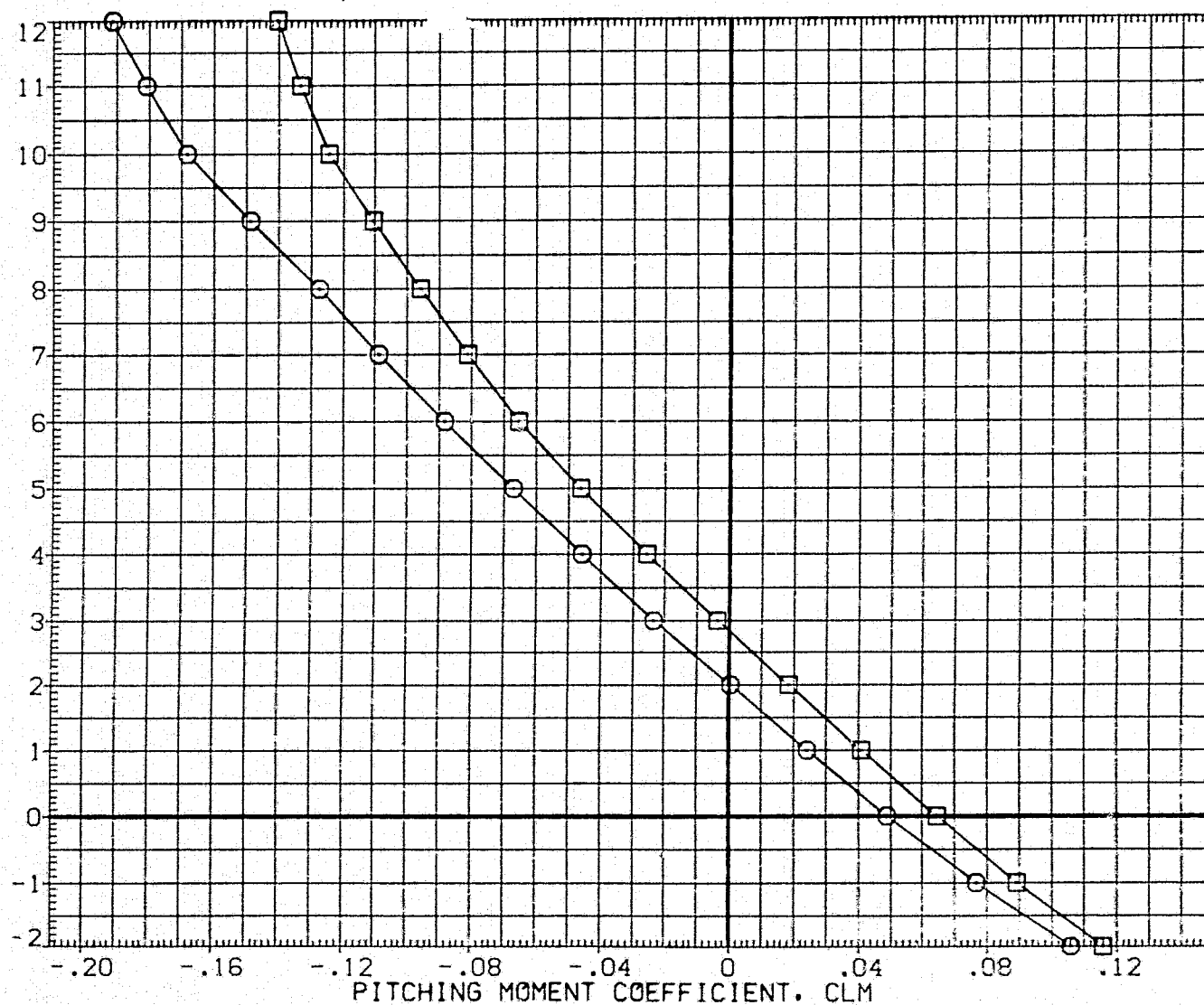


FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(B)MACH = .50

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(RGM081)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	7.850	20.000
(RGM092)	CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRF	1339.9100	IN. XC
YMRF	.0000	IN. YC
ZMRF	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

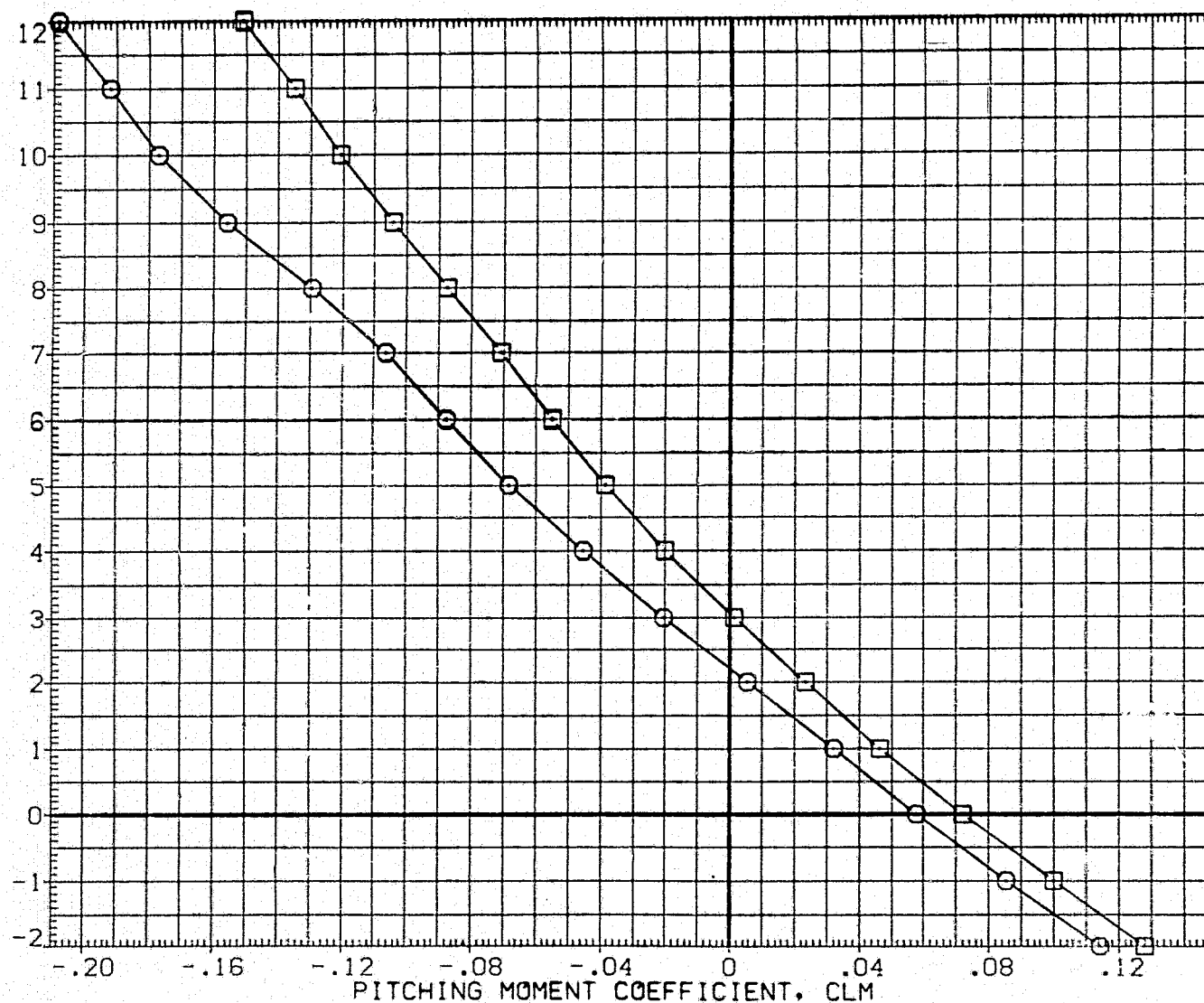


FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM091)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT39.2 )  
 (RGM092)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB 10RB S5-6  
 1.000 7.850 20.000  
 1.000 7.850 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2349.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.



FIG.223 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH CONFIG.

(CD)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD40)  $\square$  BTWT-1431CAS KI FO HIS.1A V9.1  
 (RGMD42)  $\square$  BTWT-1431CAS KI FO HIS.6 V9.1

STAB SS-6  
 -2.000 .000  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

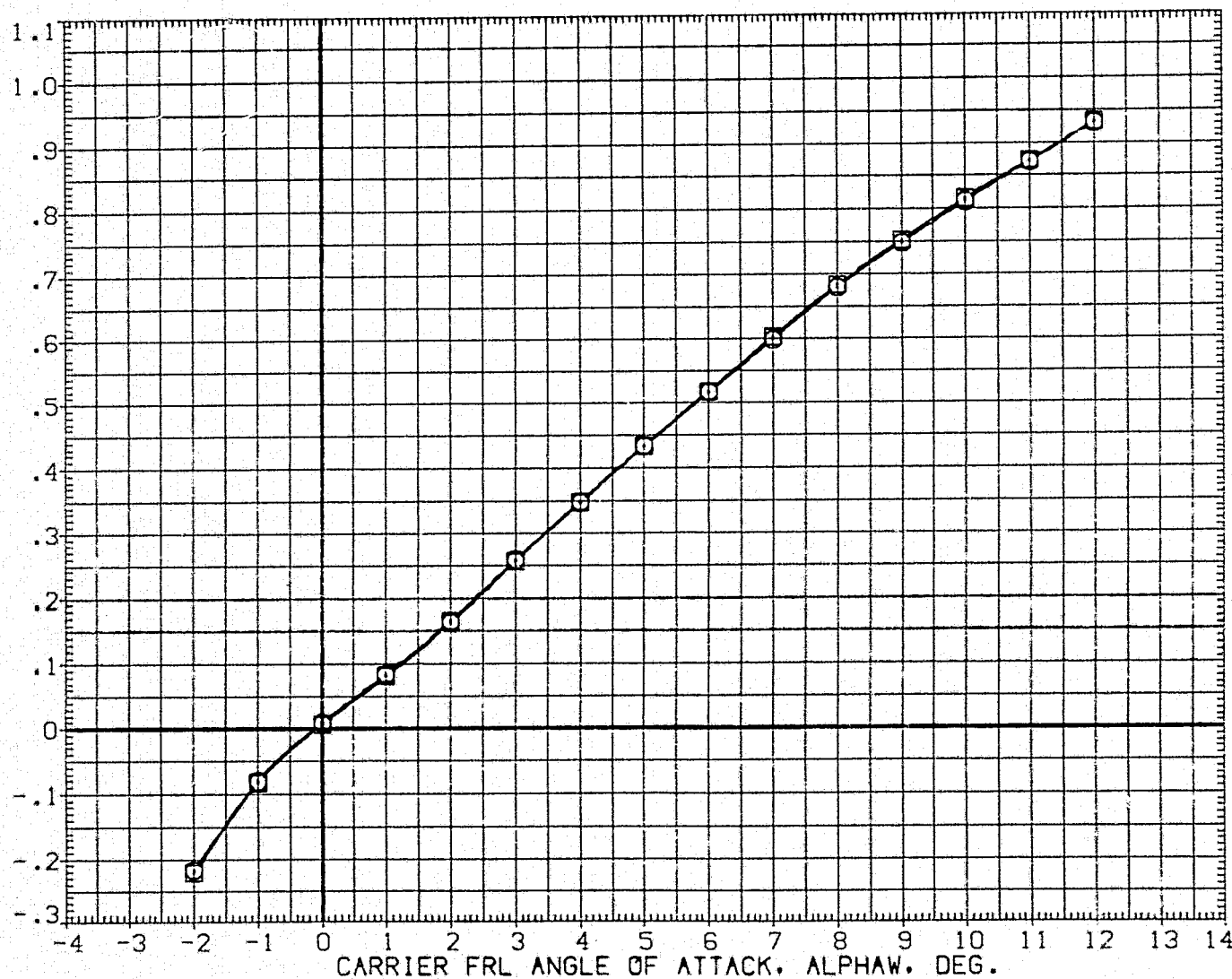


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(A)MACH = .15

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO40) ☐ BTWT-1431CA5 KI FO HIS.1A V9.1  
 (RGMO42) ☐ BTWT-1431CA5 KI FO HIS.6 V9.1

STAB S5-6  
 -2.000 .000  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

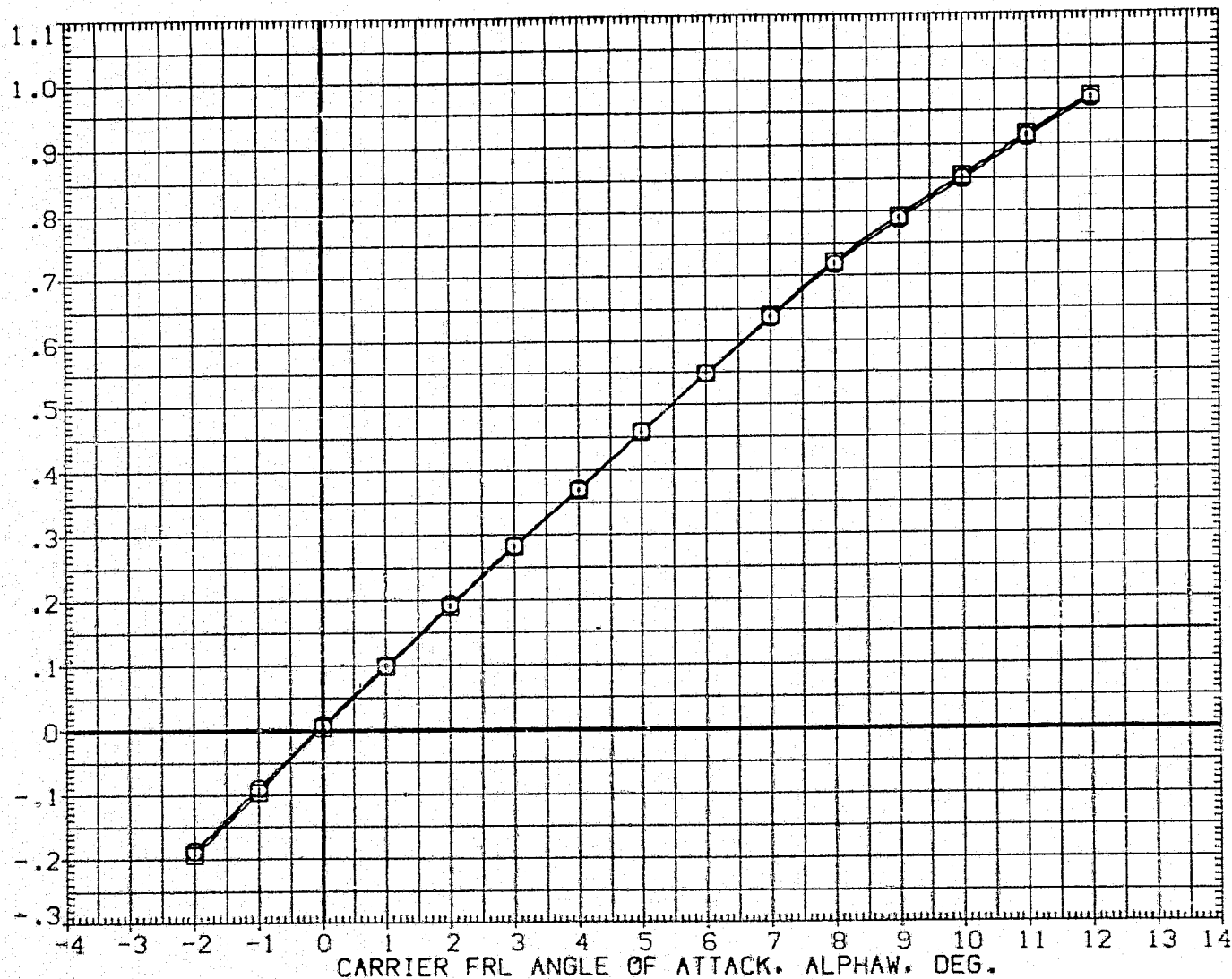


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMO40) ○	BTWT-1431CA5 KI FO H15.1A V9.1
(RGMO42) □	BTWT-1431CA5 KI FO H15.6 V9.1

STAB	S5-6
-2.000	.000
-2.000	.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

LIFT COEFFICIENT, CL

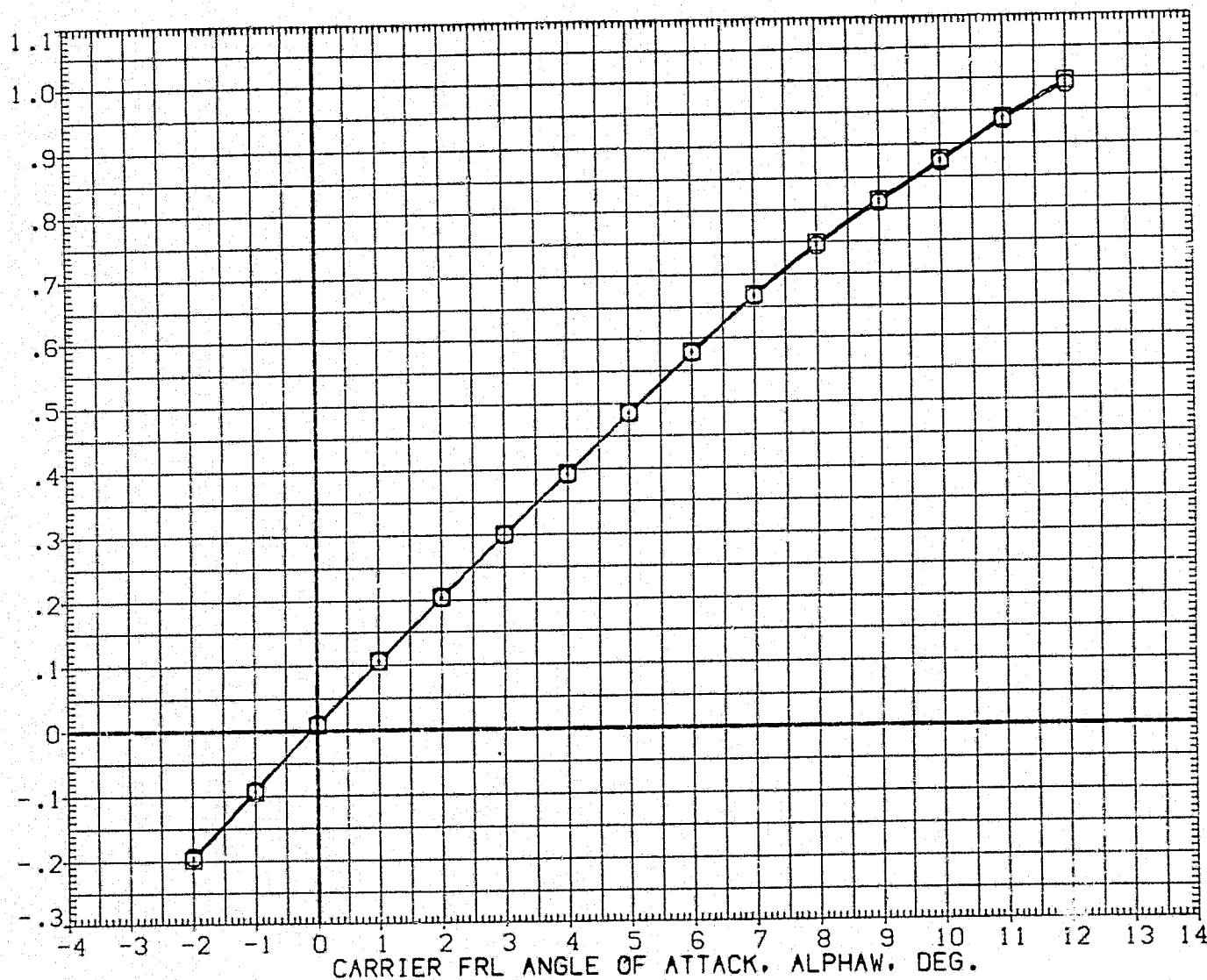


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
(C)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD40)  $\square$  BTWT-1431CAS K1 FO H15.1A V9.1  
 (RGMD42)  $\square$  BTWT-1431CAS K1 FO H15.6 V9.1

STAB S5-6  
 -2.000 .000  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

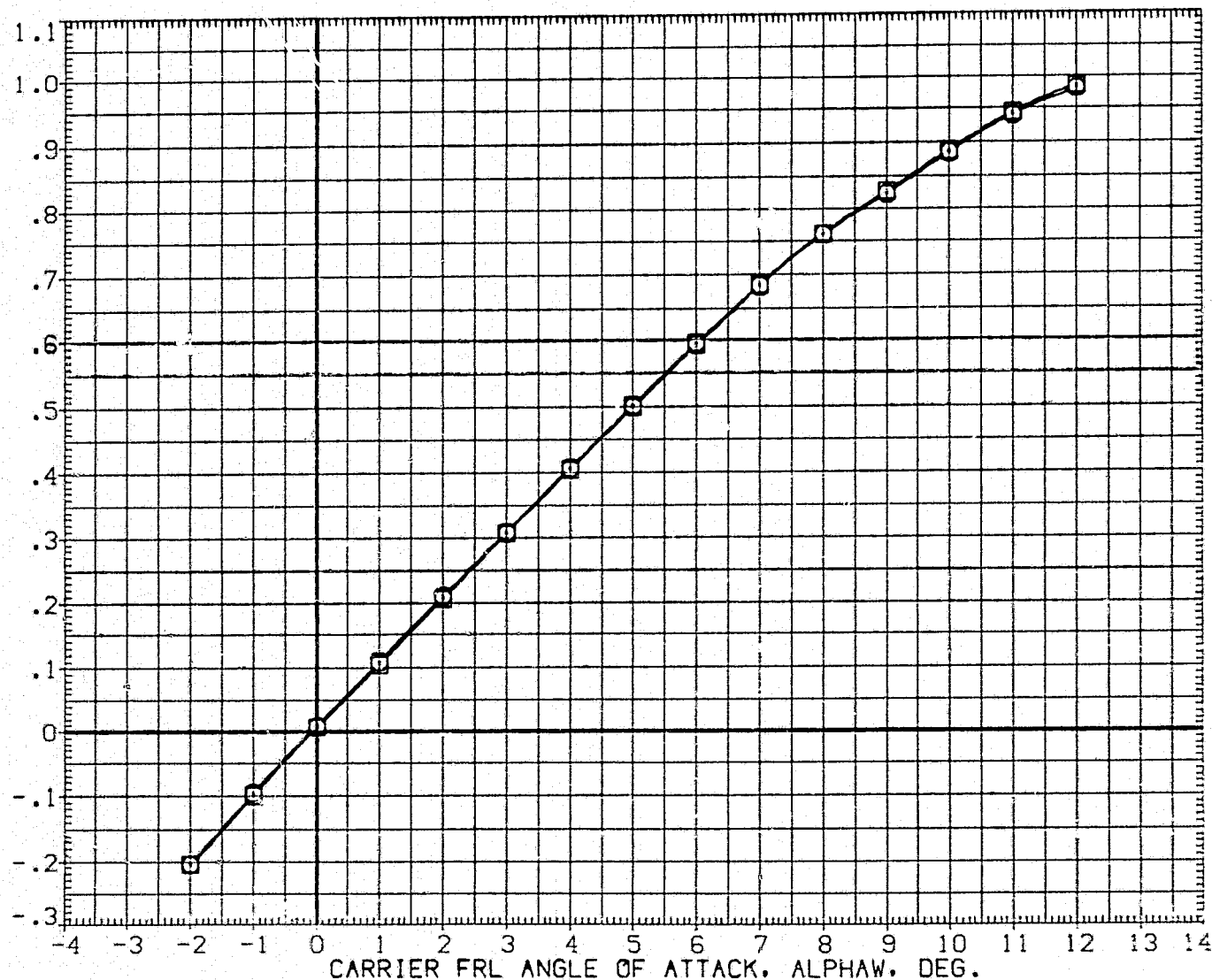


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMD40) $\square$	BTVT-1431CA5 KI FO HIS.1A V9.1
(RGMD42) $\square$	BTVT-1431CA5 KI FO HIS.6 V9.1

STAB	SS-6
-2.000	.000
-2.000	.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

LIFT COEFFICIENT, CL

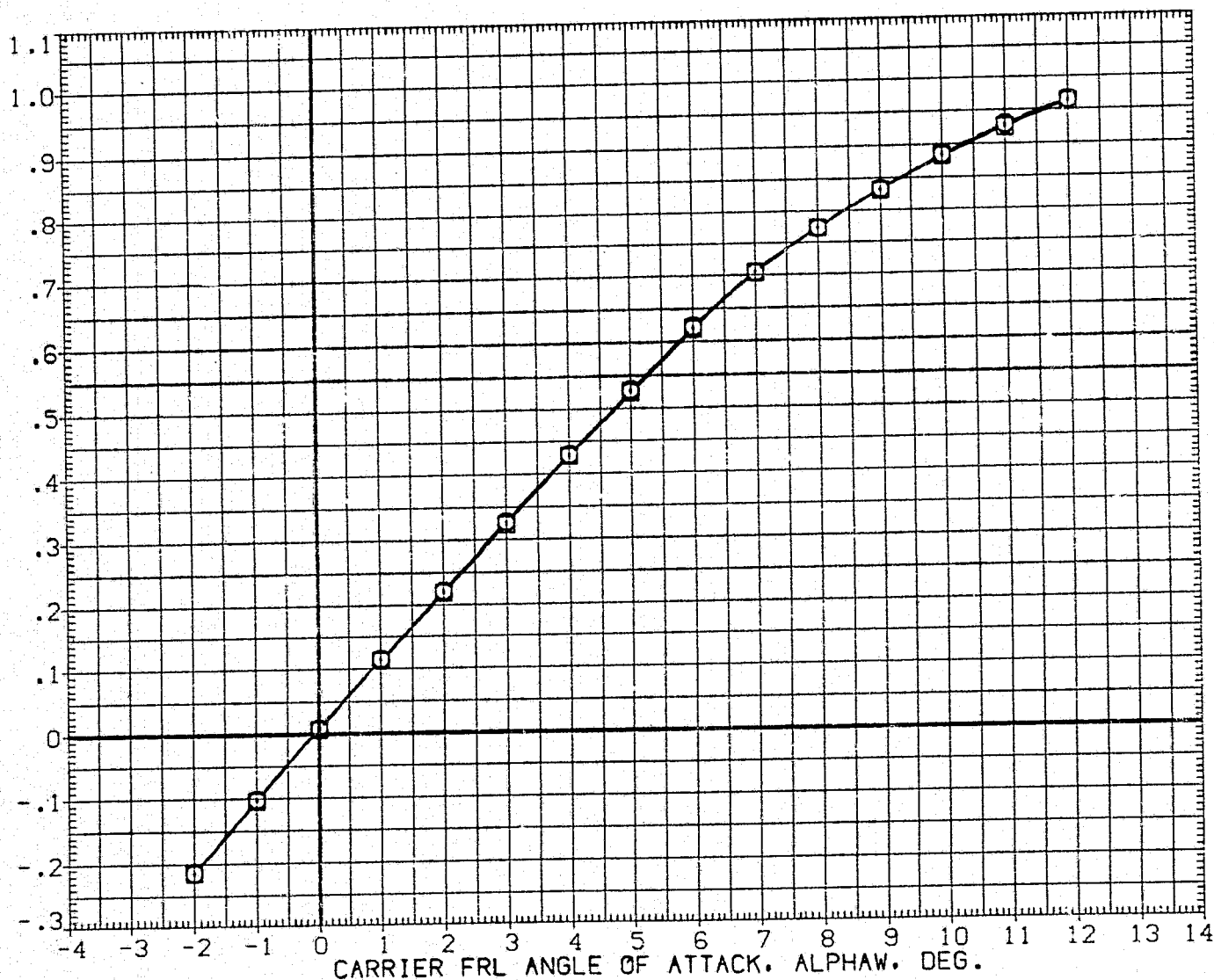


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
(E)MACH = .70

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (RGM040)    ○    BTWT-1431CA5 K1 FO H15.1A V9.1  
 (RGM042)    □    BTWT-1431CA5 K1 FO H15.6 V9.1

STAB    S5-6  
 -2.000    .000  
 -2.000    .000

REFERENCE INFORMATION  
 SREF    5500.0000    SQ. FT.  
 LREF    327.8000    IN.  
 BREF    2348.0000    IN.  
 XMRP    1339.9100    IN. XC  
 YMRP    .0000    IN. YC  
 ZMRP    190.7500    IN. ZC  
 SCALE    .0300

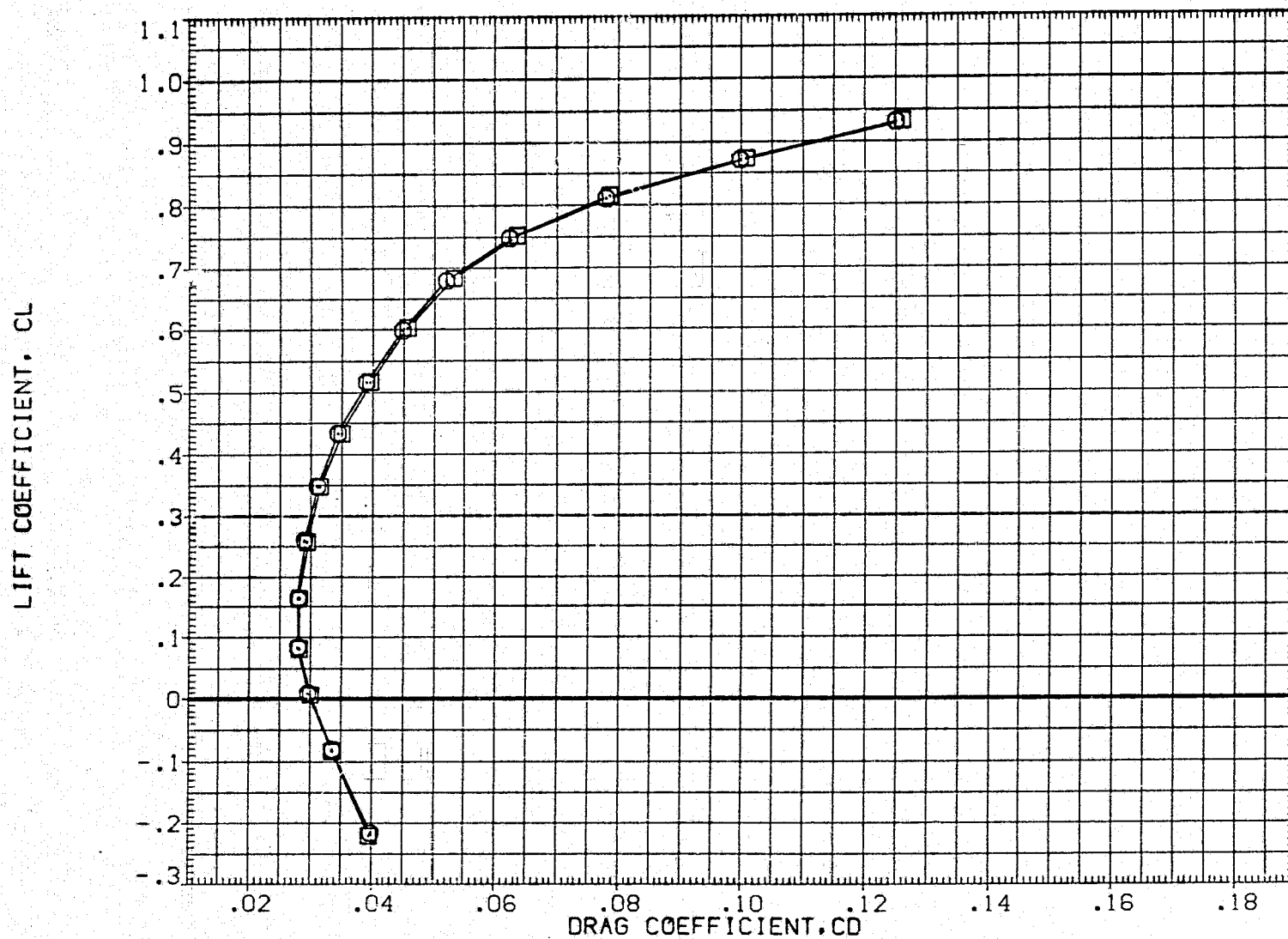


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(A)MACH = .15



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD40)  $\square$  BTWT-1431CA5 K1 FO H15.1A V9.1  
 (RGMD42)  $\square$  BTWT-1431CA5 K1 FO H15.6 V9.1

STAB S5-6  
 -2.000 .000  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

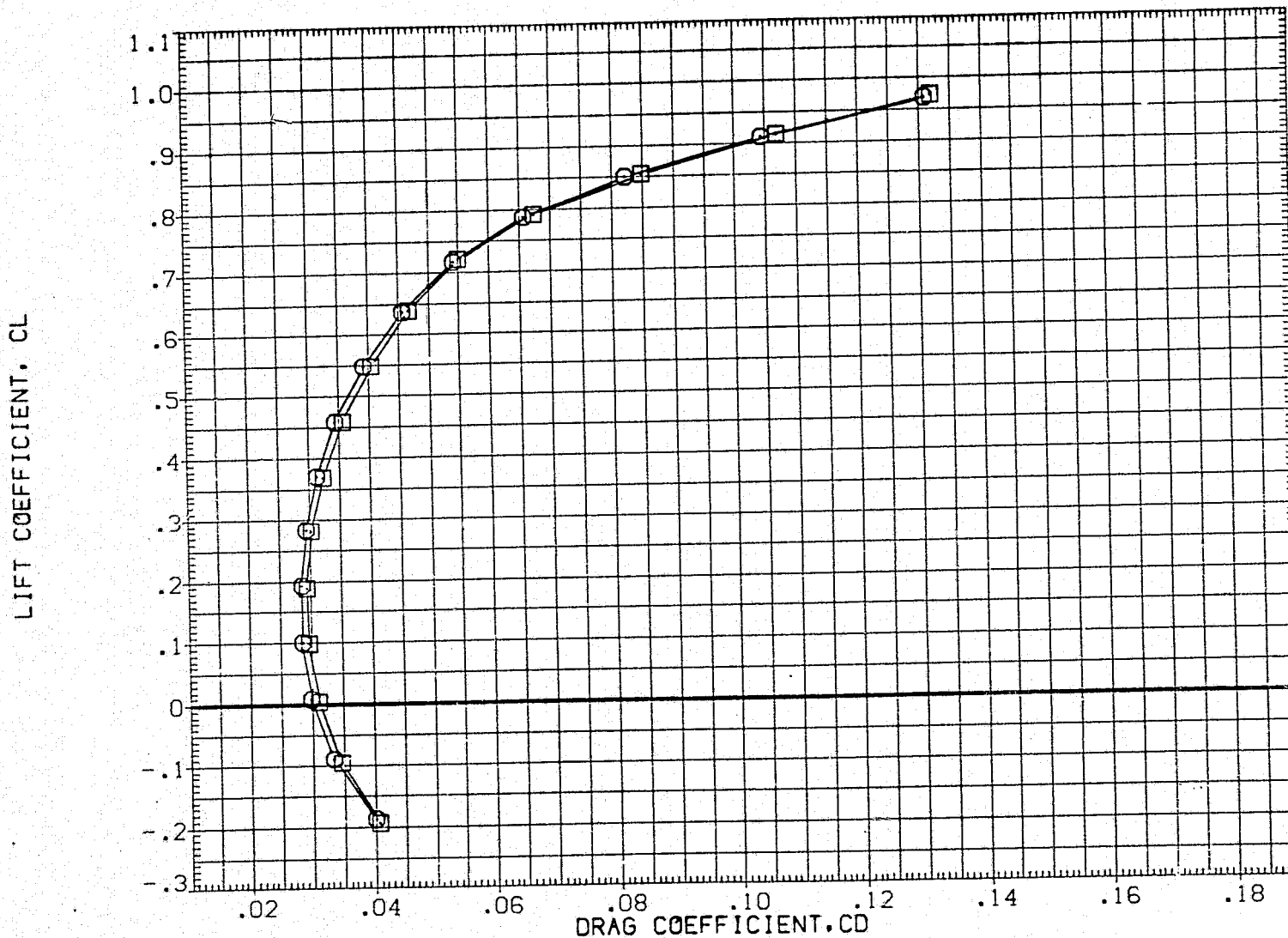


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
 (B)MACH = .30

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (RGMD40)    □    BTWT-1431CAS KI FO H15.1A V9.1  
 (RGMD42)    □    BTWT-1431CAS KI FO H15.6 V9.1

STAB    SS-6  
 -2.000    .000  
 -2.000    .000

REFERENCE INFORMATION  
 SREF    5500.0000    SQ.FT.  
 LREF    327.8000    IN.  
 BREF    2348.0000    IN.  
 XMRP    1339.9100    IN. XC  
 YMRP    .0000    IN. YC  
 ZMRP    190.7500    IN. ZC  
 SCALE    .0300



FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
 (C)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (R3M040)  $\square$  BTWT-1431CA5 K1 FO H15.1A V9.1  
 (R3M042)  $\square$  BTWT-1431CA5 K1 FO H15.6 V9.1

STAB S5-6  
 -2.000 .000  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

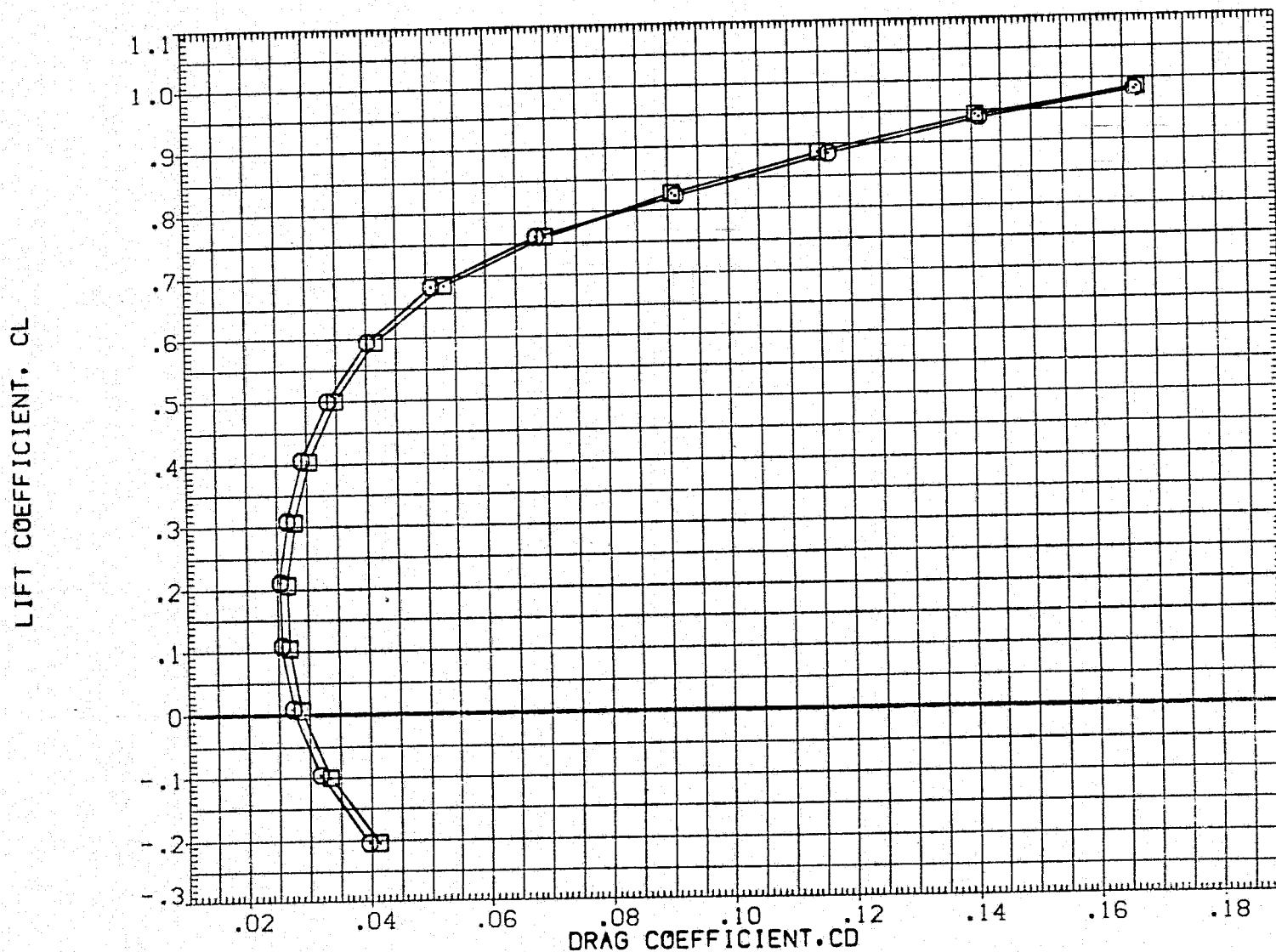


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
 (D)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (R6MD40) □ BTWT-1431CA5 KI FO H15.1A V9.1  
 (R6MD42) □ BTWT-1431CA5 KI FO H15.6 V9.1

STAB S5-6  
 -2.000 .000  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

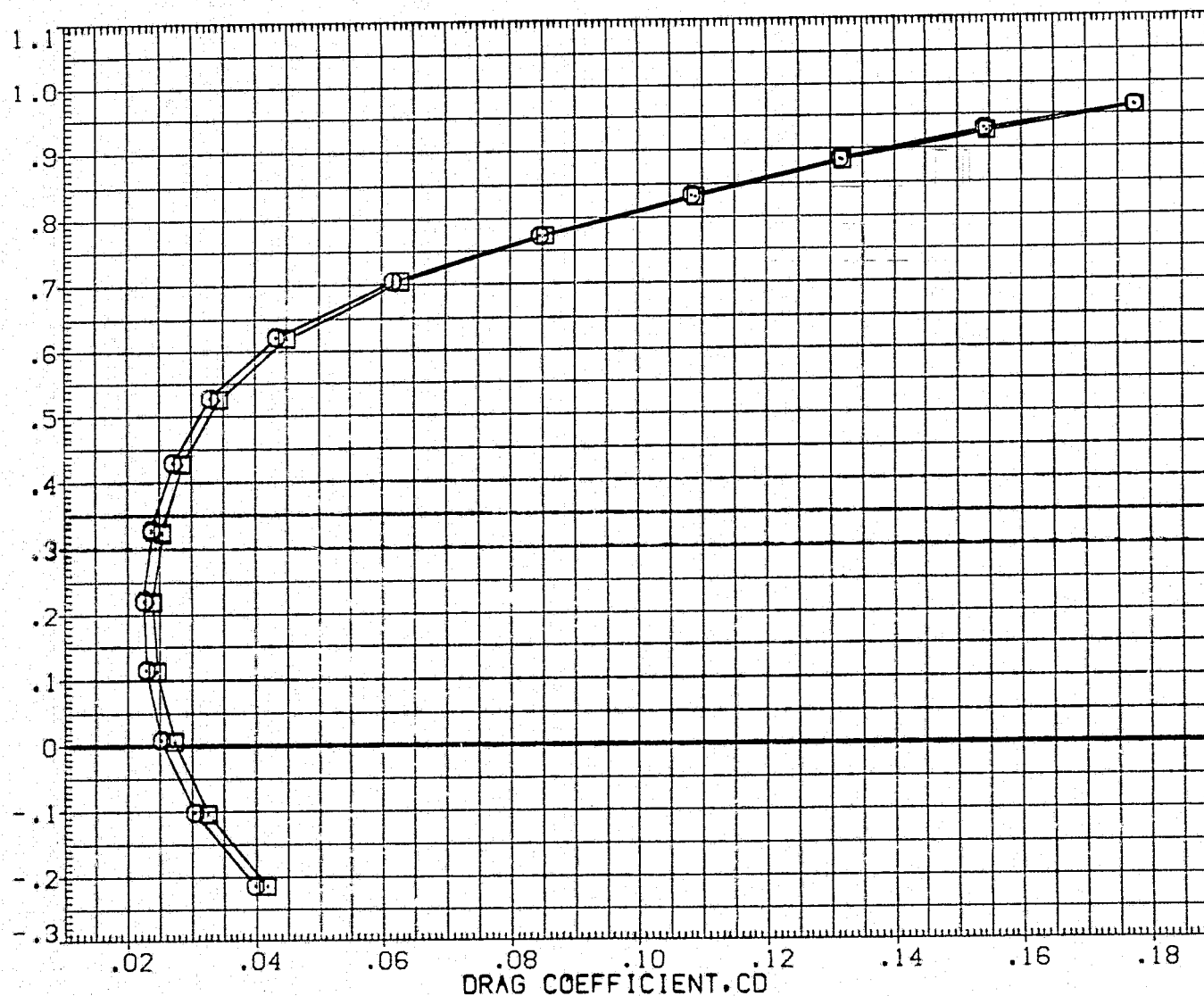


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
 (E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMD40) ○	BTWT-1431CA5 K1 FO H15.1A V9.1
(RGMD42) □	BTWT-1431CA5 K1 FO H15.6 V9.1

STAB	S5-6
-2.000	.000
-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XM RP	1339.9100	IN. XC
YM RP	.0000	IN. YC
ZM RP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

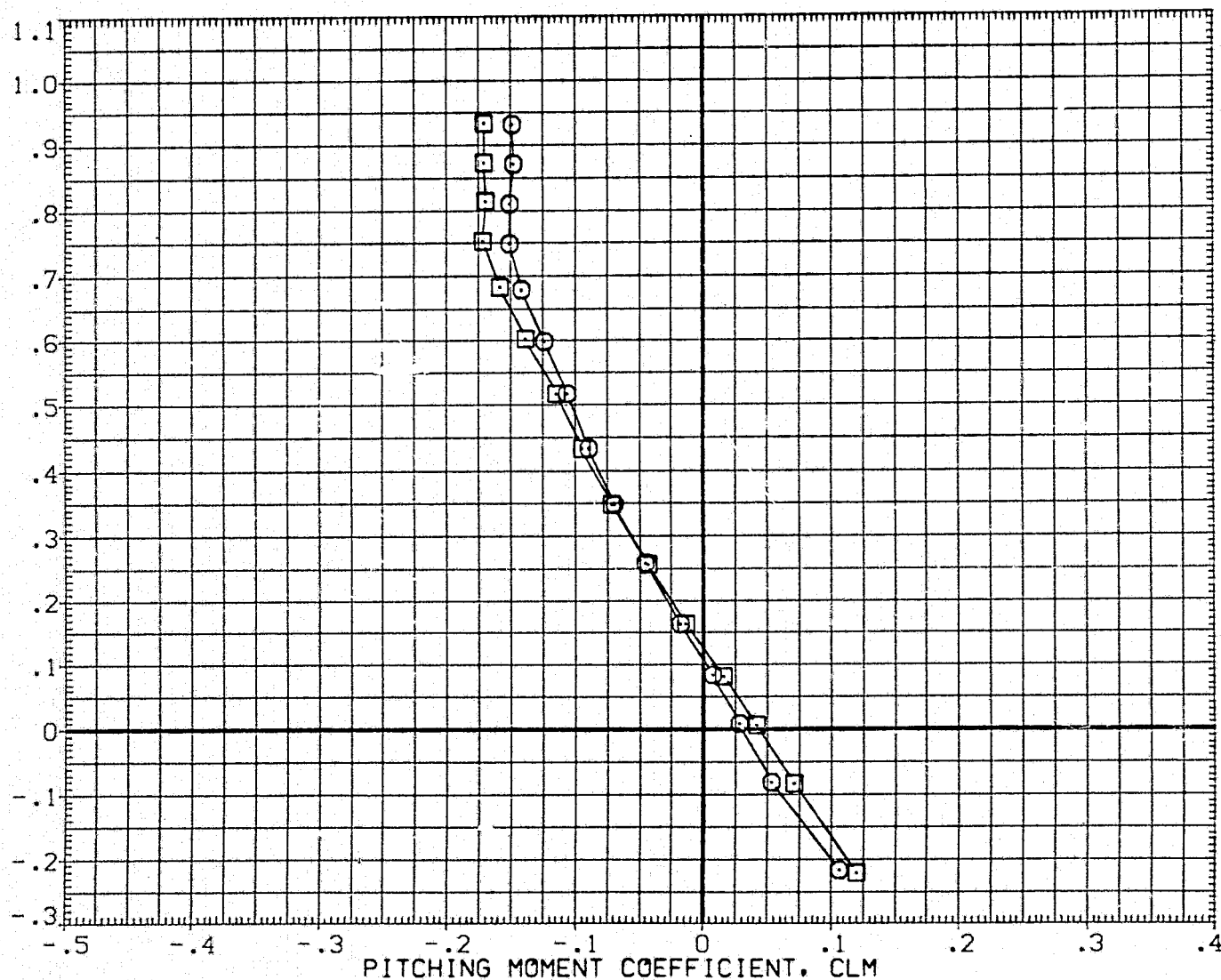


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM040) ○	BTWT-1431CAS K1 FO H15.1A V9.1
(RGM042) □	BTWT-1431CAS K1 FO H15.6 V9.1

STAB	S5-6
-2.000	.000
-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

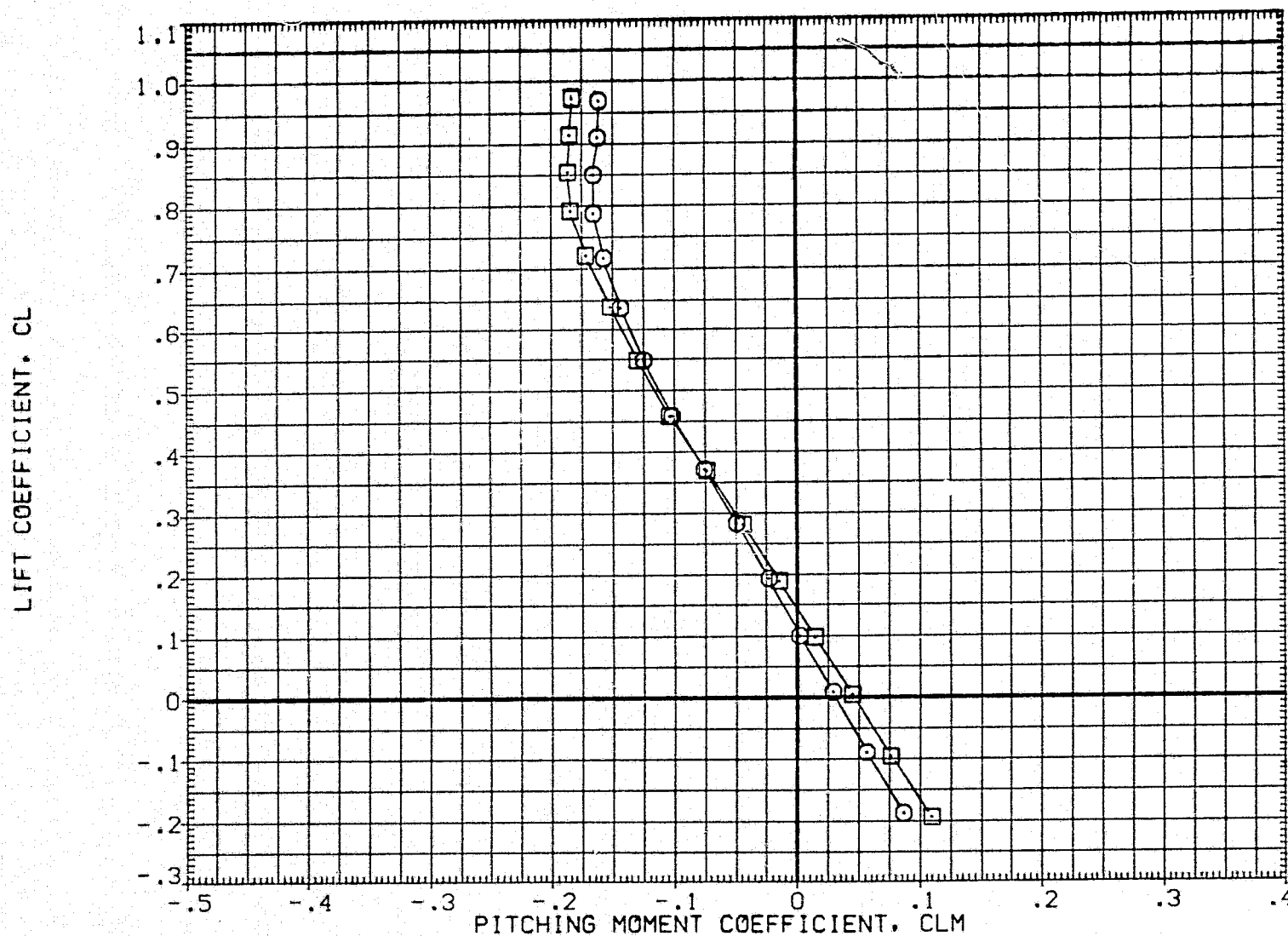


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM040) ○	BTWT-1431CA5 K1 FO H15.1A V9.1
(RGM042) □	BTWT-1431CA5 K1 FO H15.6 V9.1

STAB	S5-6
-2.000	.000
-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

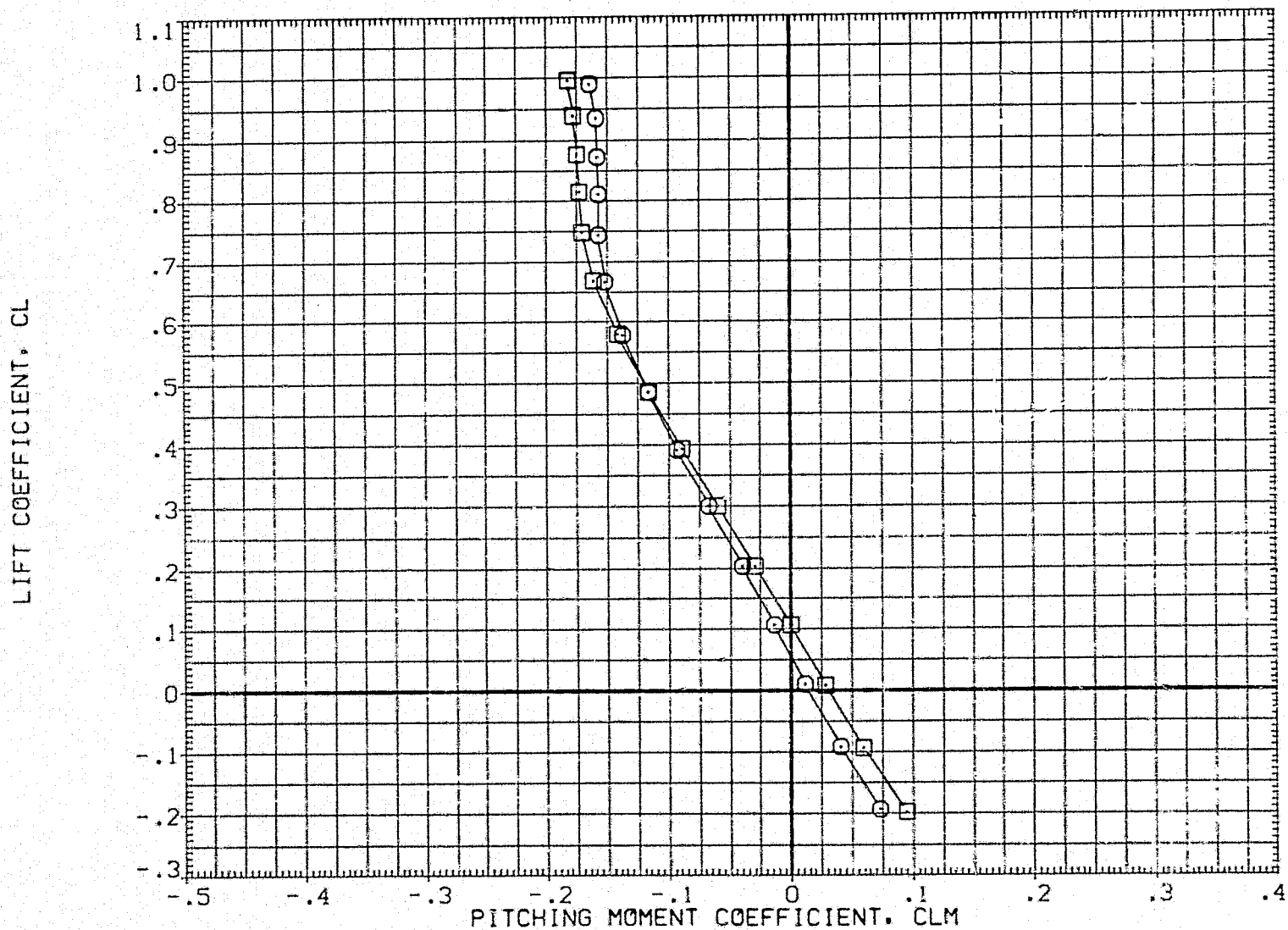


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(C)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD40) ○ BTWT-1431CAS K1 FO H15.1A V9.1  
 (RGMD42) □ BTWT-1431CAS K1 FO H15.6 V9.1

STAB S5-6  
 -2.000 .000  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

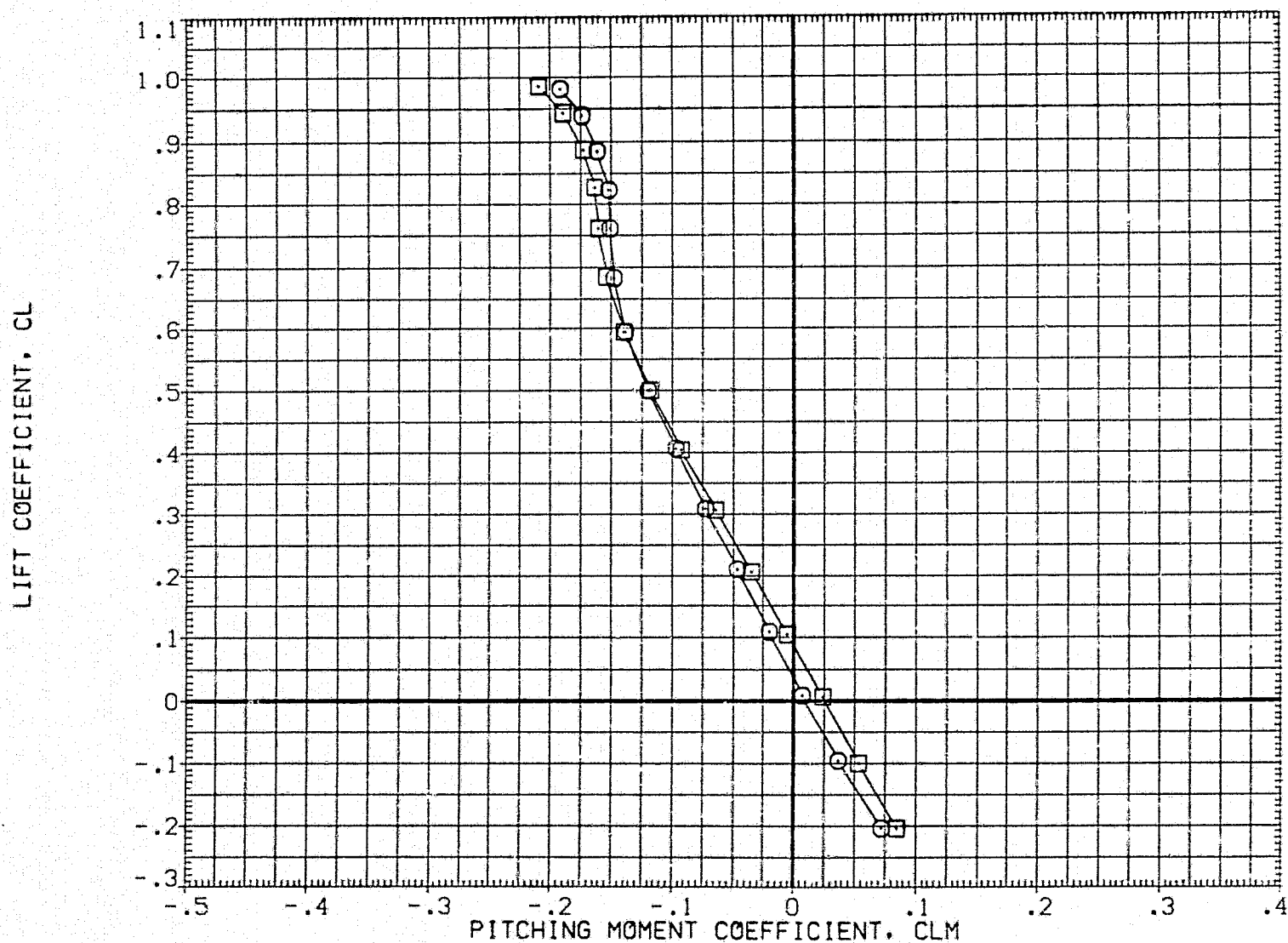


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(D)MACH = .60



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD40)  $\square$  BTWT-1431CA5 K1 FO H15.1A V9.1  
 (RGMD42)  $\square$  BTWT-1431CA5 K1 FO H15.6 V9.1

STAB S5-6  
 -2.000 .000  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

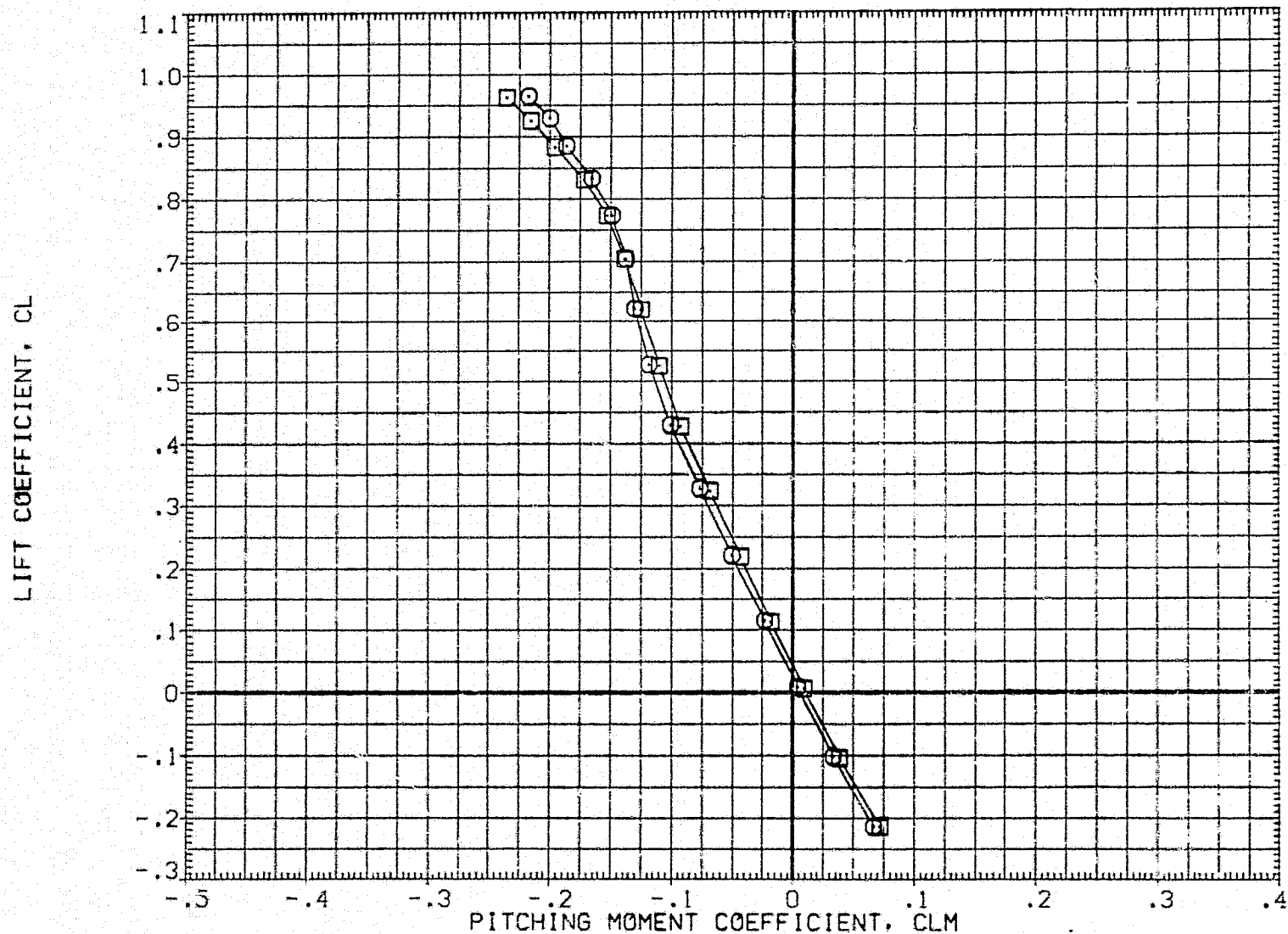


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(E)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO40) BTWT-1431CA5 K1 FO H15.1A V9.1  
 (RGMO42) BTWT-1431CA5 K1 FO H15.6 V9.1

STAB S5-6  
 -2.000 .000  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHAW, DEG.

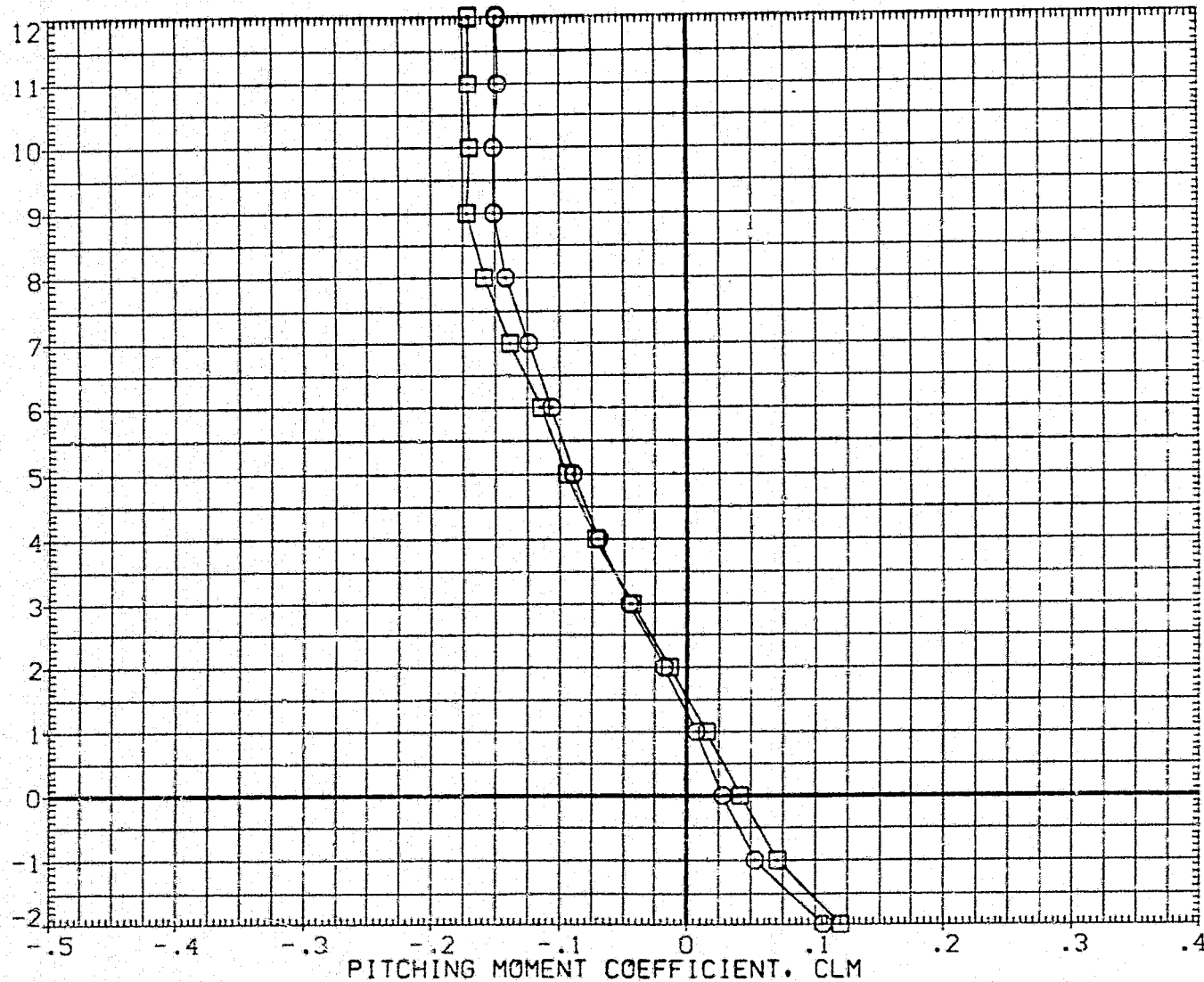


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
 (A)MACH = .15

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD40) ○ BTWT-1431CA5 KI FO H15.1A V9.1  
 (RGMD42) □ BTWT-1431CA5 KI FO H15.6 V9.1

STAB S5-6  
 -2.000 :000  
 -2.000 :000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1338.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

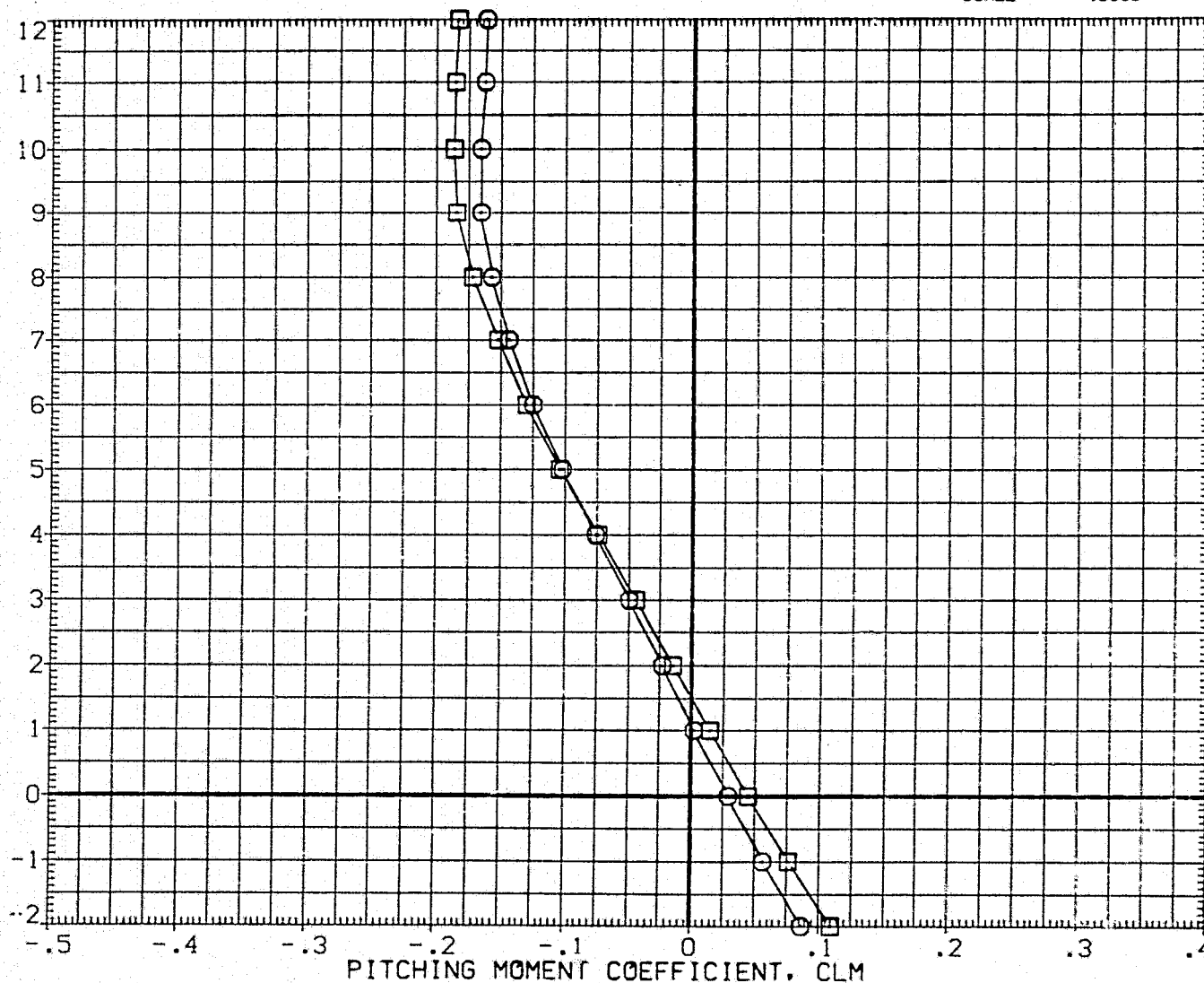


FIG.22A 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
 (B)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO40) ○ BTWT-1431CAS K1 FO H15.1A V9.1  
 (RGMO42) □ BTWT-1431CAS K1 FO H15.1 V9.1

STAB SS-6  
 -2.000 .000  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

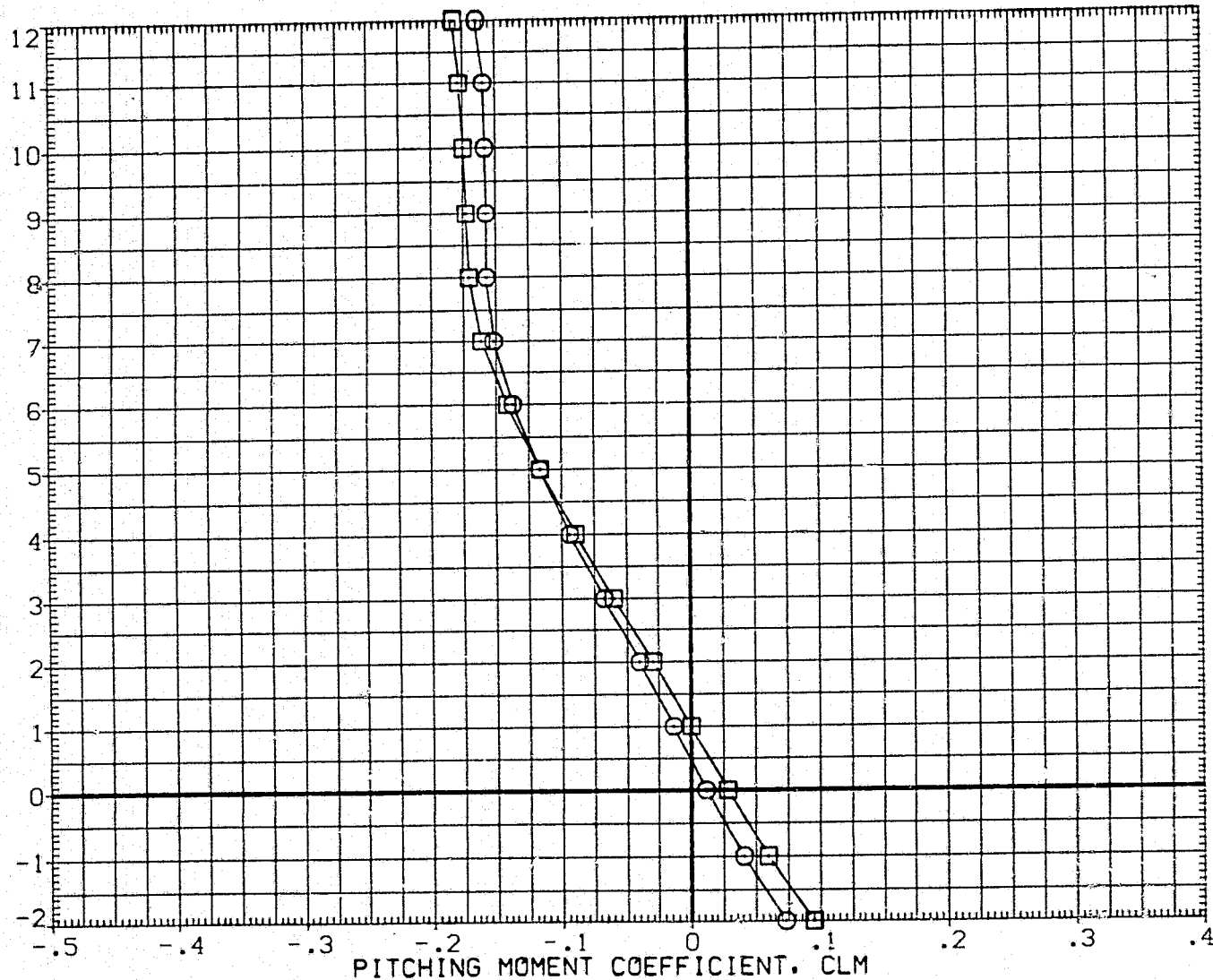


FIG.224 747 ALONE. EFFECT OF HORIZ TIP FINS, FLAPS UP

(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMD40) ○	BTWT-1431CAS K1 FO H15.1A V9.1
(RGMD42) □	BTWT-1431CAS K1 FO H15.6 V9.1

STAB	S5-6
-2.000	.000
-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XM RP	1339.9100	IN. XC
YM RP	.0000	IN. YC
ZM RP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.



FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
(D)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD40) ○ BTWT-1431CA5 KI FO H15.1A V9.1  
 (RGMD42) □ BTWT-1431CA5 KI FO H15.6 V9.1

STAB S5-6  
 -2.000 .000  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

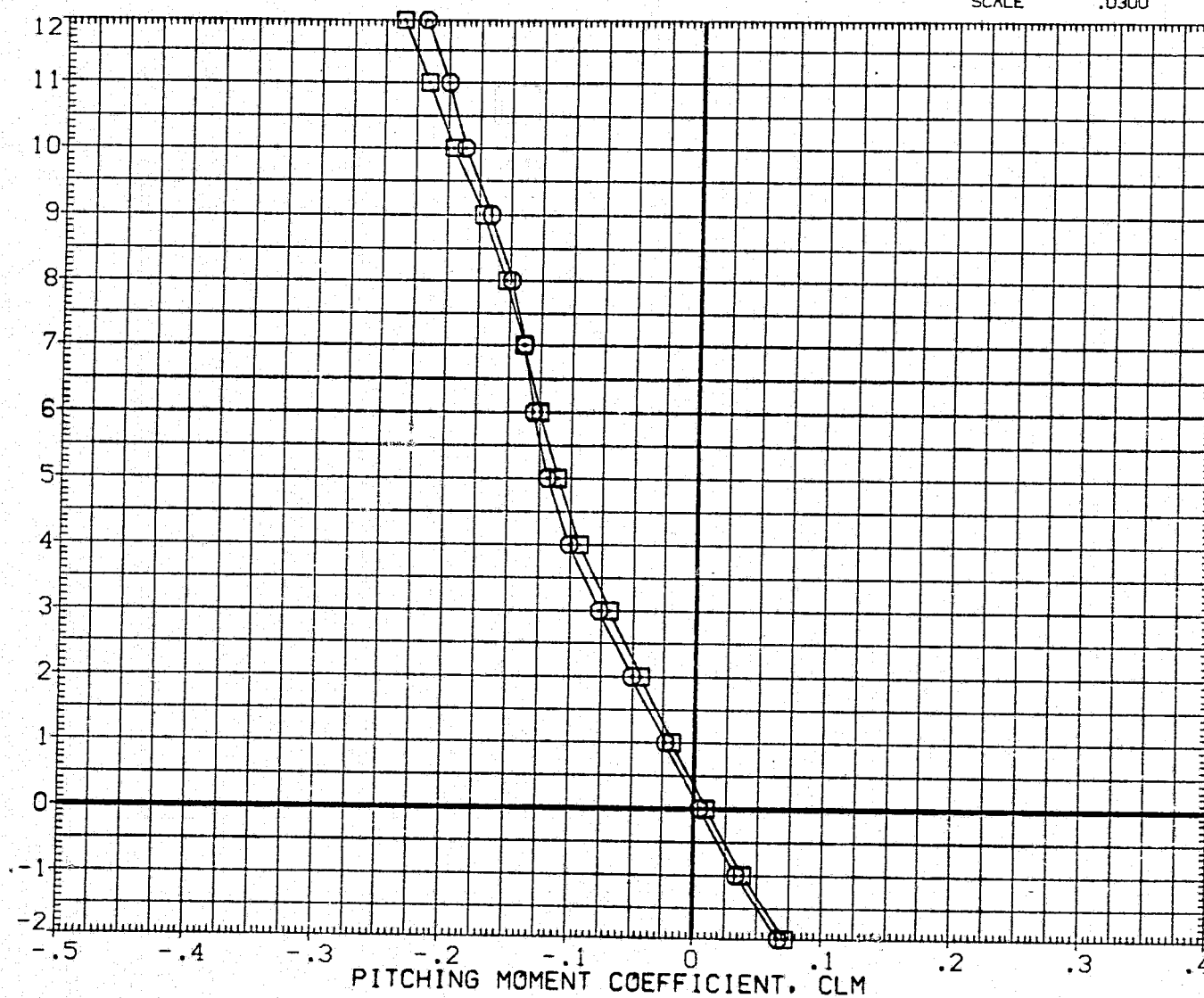


FIG.224 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(E)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM125)  $\square$  CA5 K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM117)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )

STAB

IORB

S5-6

-2.000  
-2.000

4.000  
4.000

.000  
.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 SREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

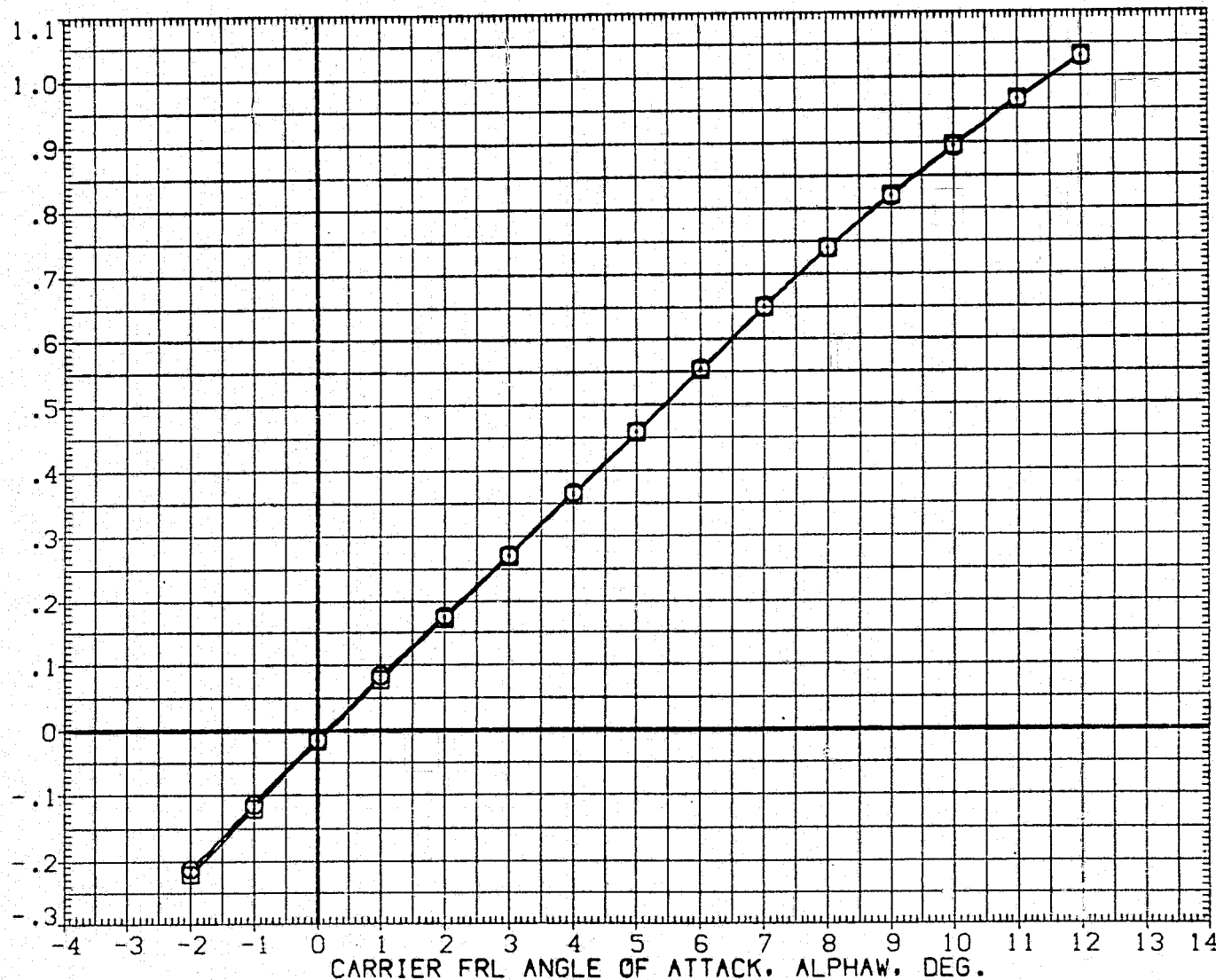


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM125) ☐ CA5 K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM117) ☐ CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )

STAB IORB S5-6  
 -2.000 4.000 .000  
 -2.000 4.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

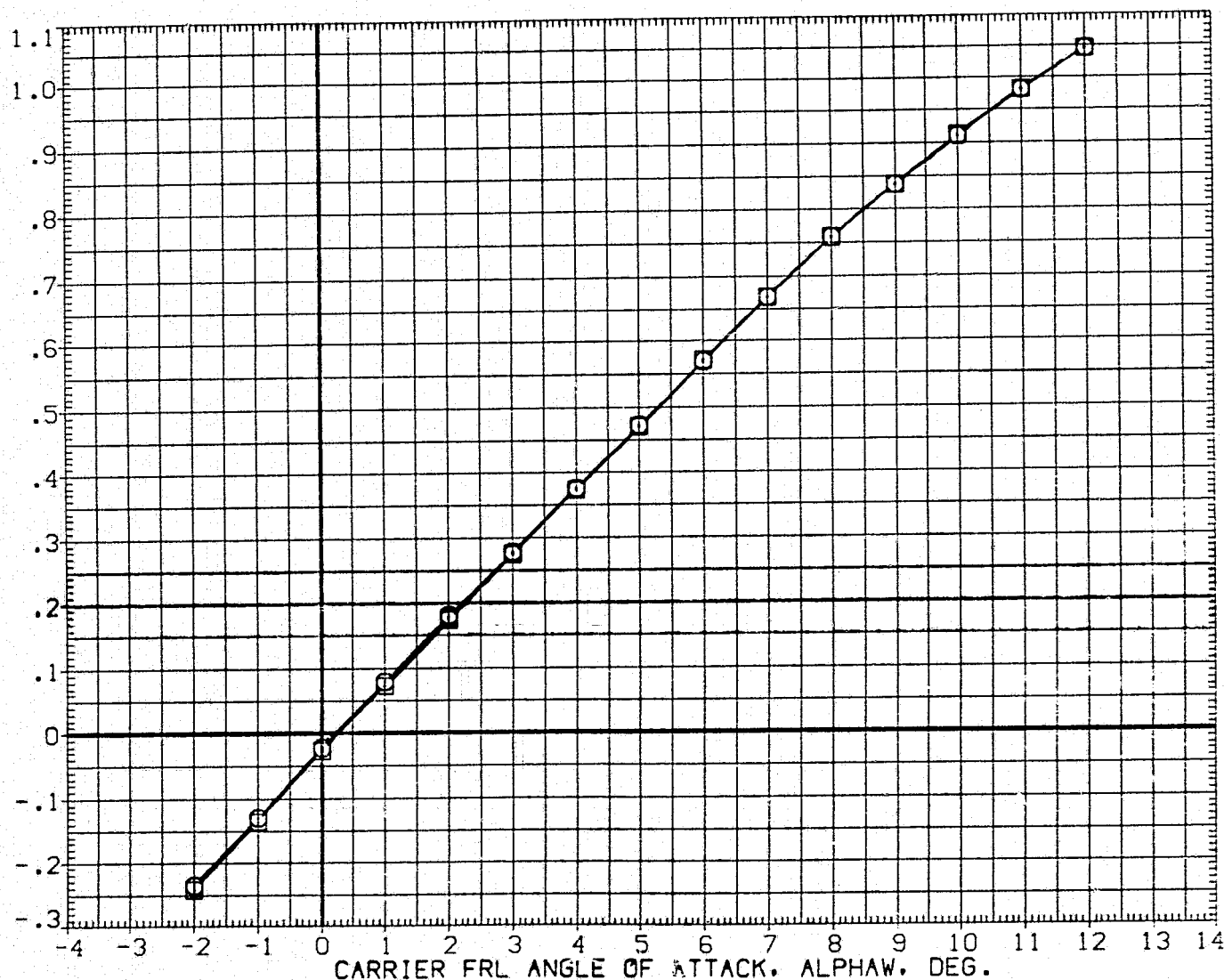


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY  
 (B)MACH = .50



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM125) ☐ CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM117) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )

STAB 10RB S5-6  
 -2.000 4.000 .000  
 -2.000 4.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

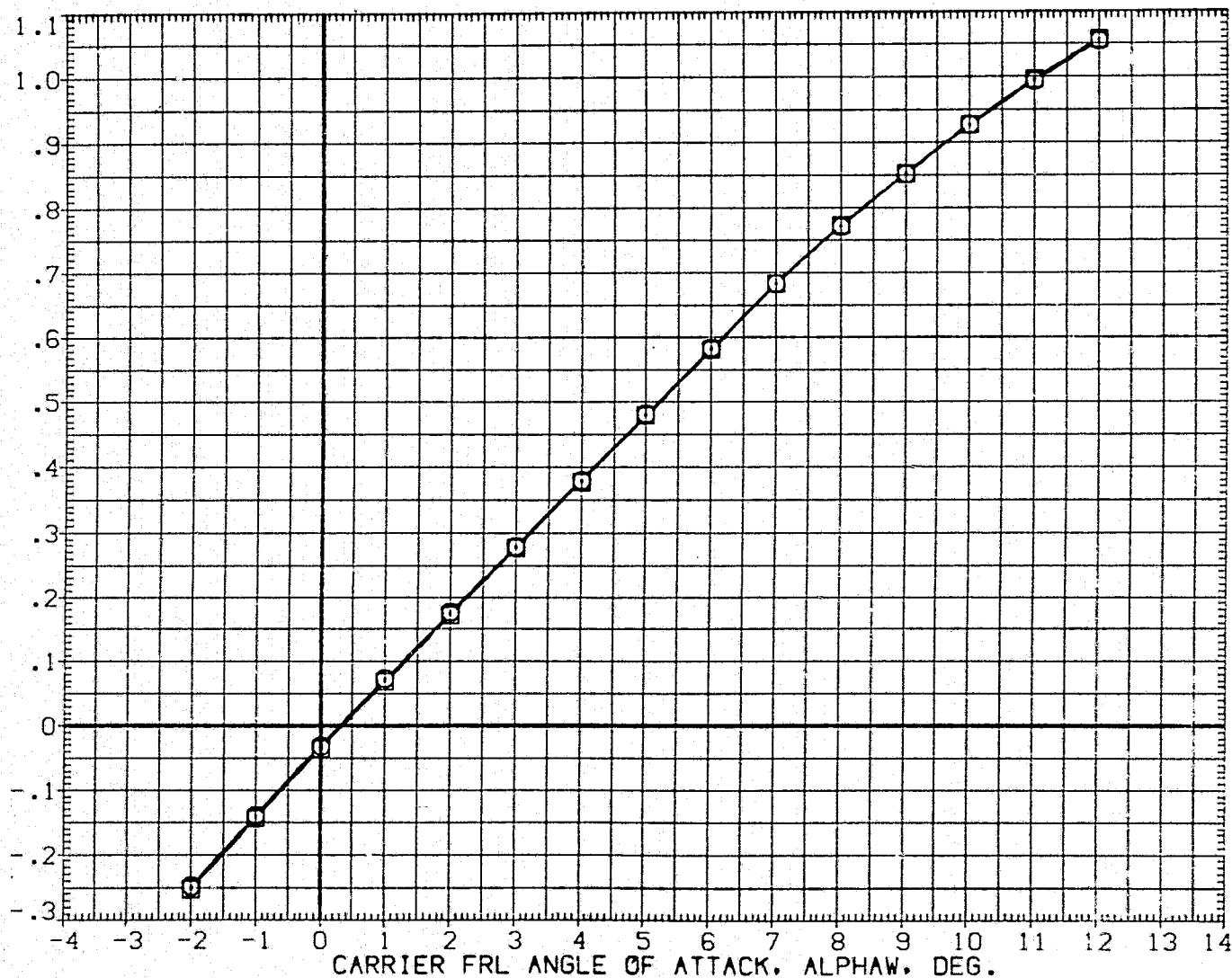


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(C)MACH = .60

## DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM125)  $\square$  CAS K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM117)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )

STAB

-2.000  
-2.000

IORB

4.000  
4.000

SS-6

.000  
.000

## REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

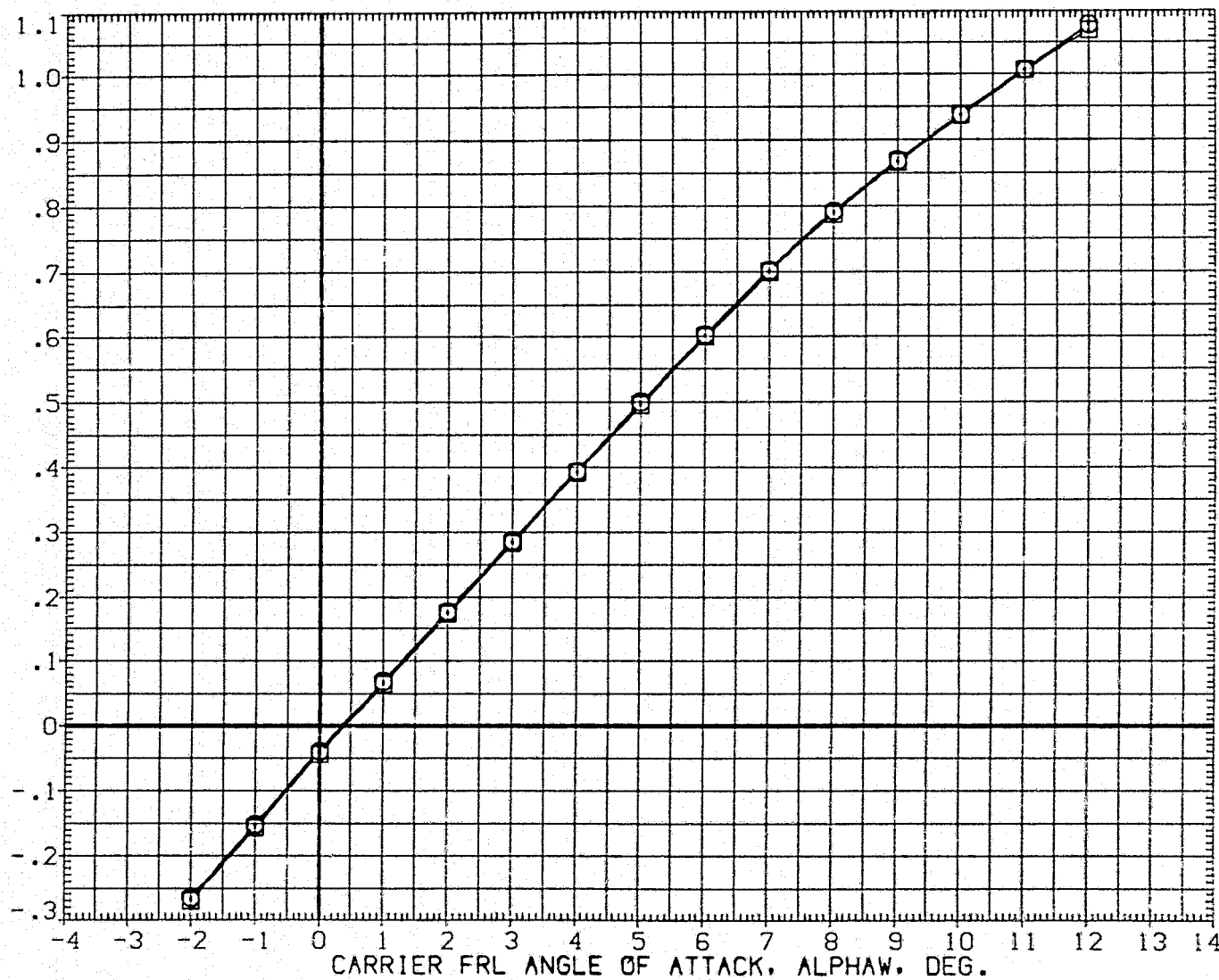


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM125)	○ CAS K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	4.000	.000
(RGM117)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

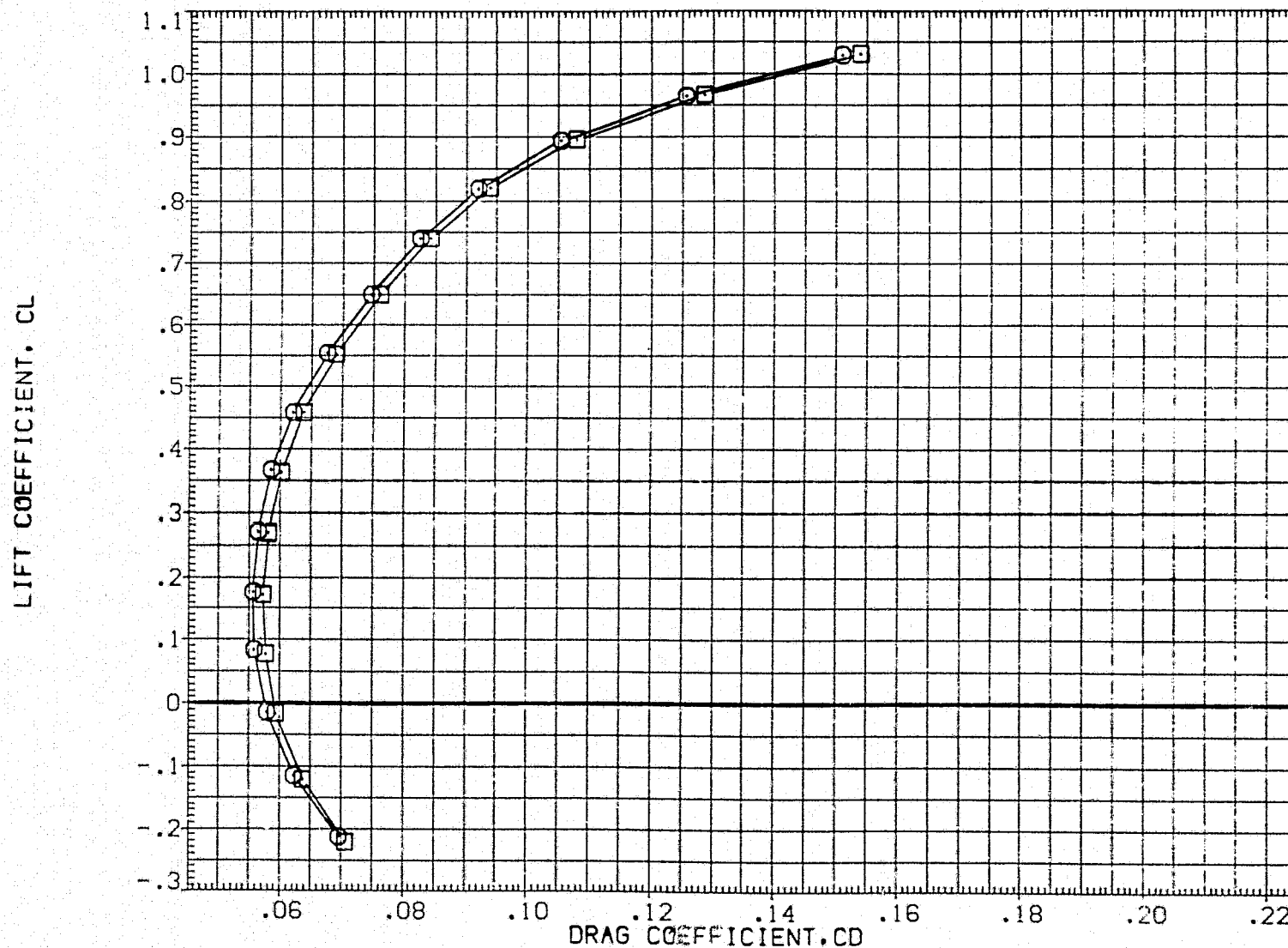


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(A)MACH = .30

LIFT COEFFICIENT, CL

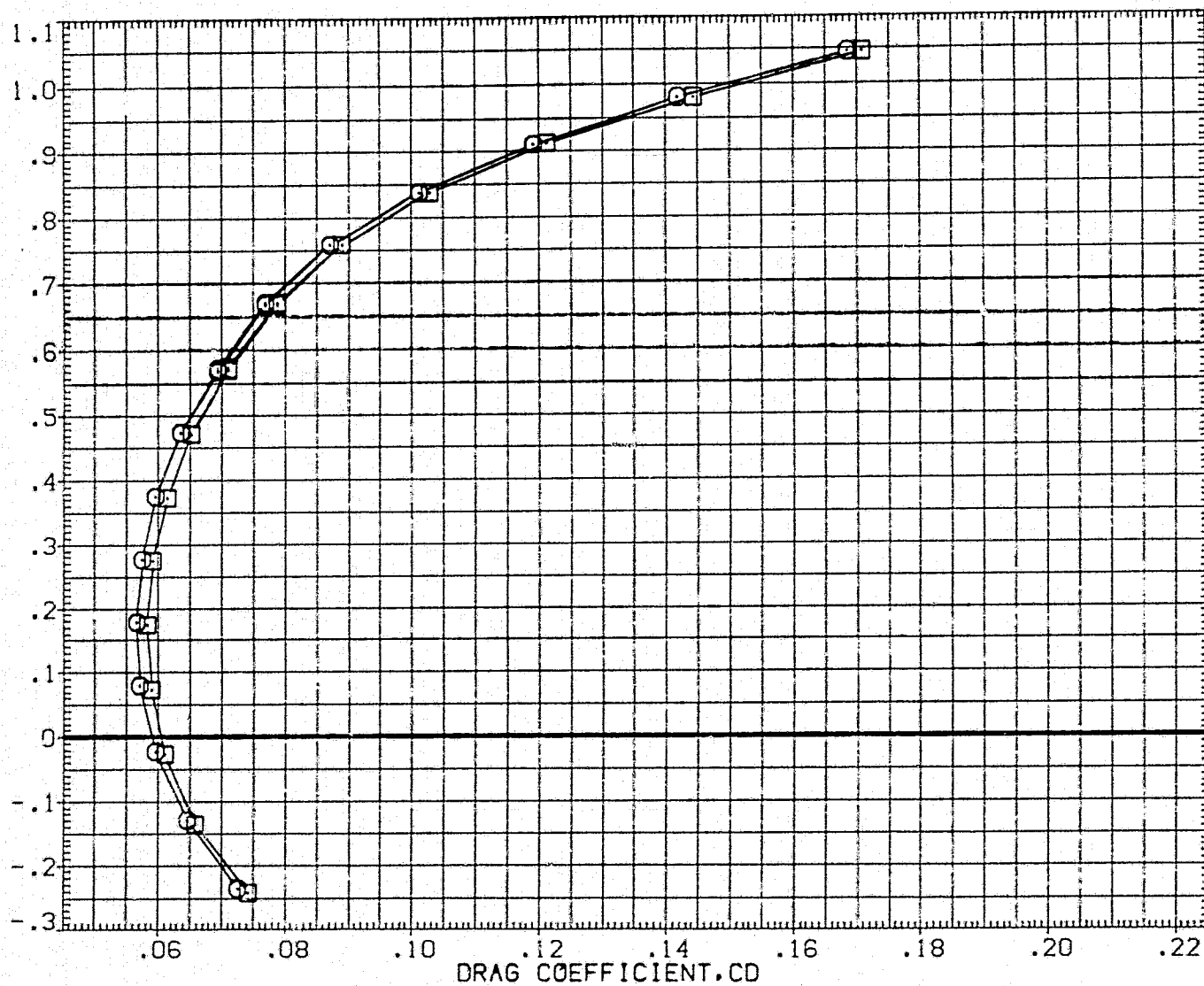


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY  
(B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM125) ☐ CAS KI FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM117) ☐ CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )

STAB 1298 SS-6  
 -2.000 4.000 .000  
 -2.000 4.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

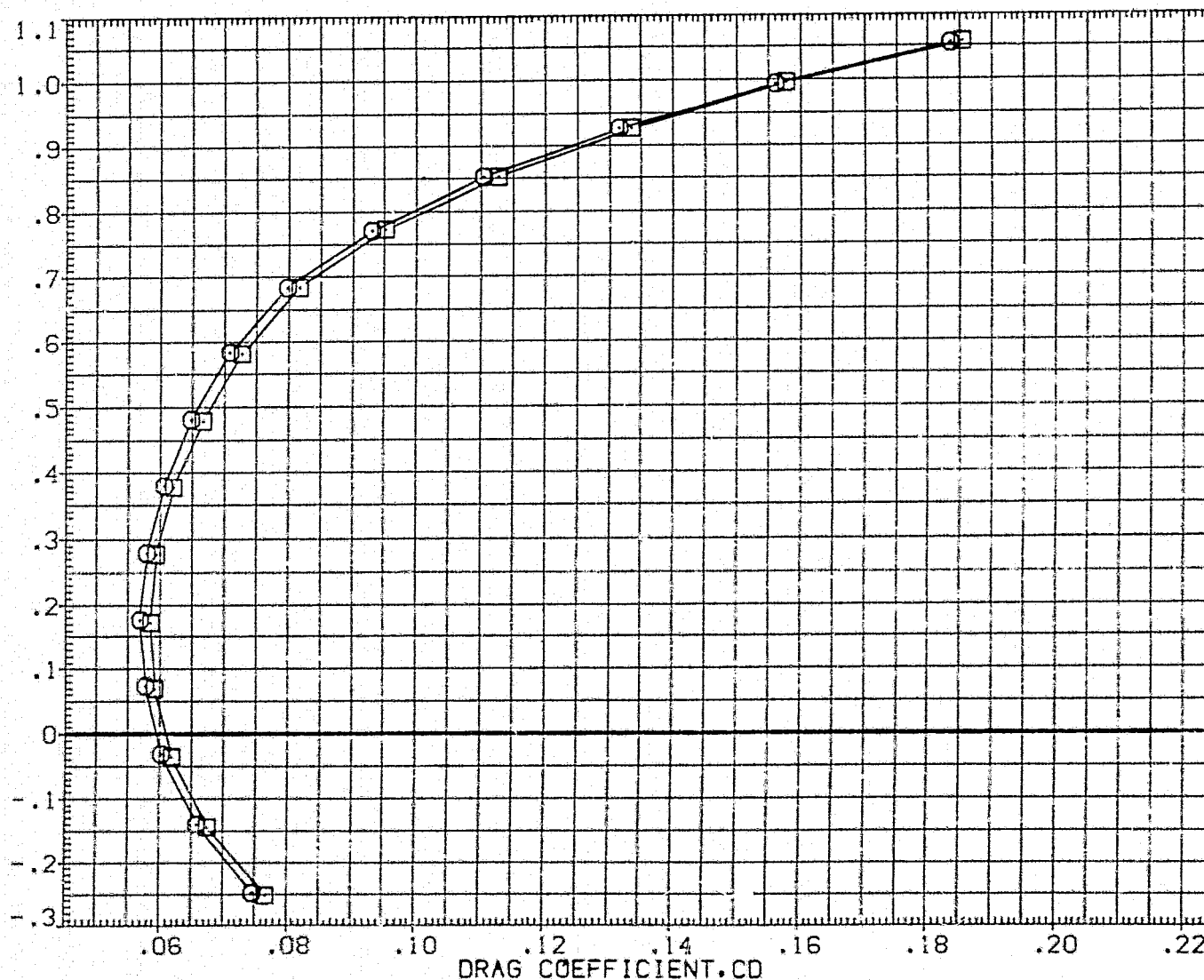


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION
(RGM125)	CA5 K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3)	-2.000	4.000	.000	SREF 5500.0000 SQ.FT.
(RGM117)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	-2.000	4.000	.000	LREF 327.8000 IN.
					BREF 2348.0000 IN.
					XMRP 1339.9100 IN. XC
					YMRP .0000 IN. YC
					ZMRP 190.7500 IN. ZC
					SCALE .0300

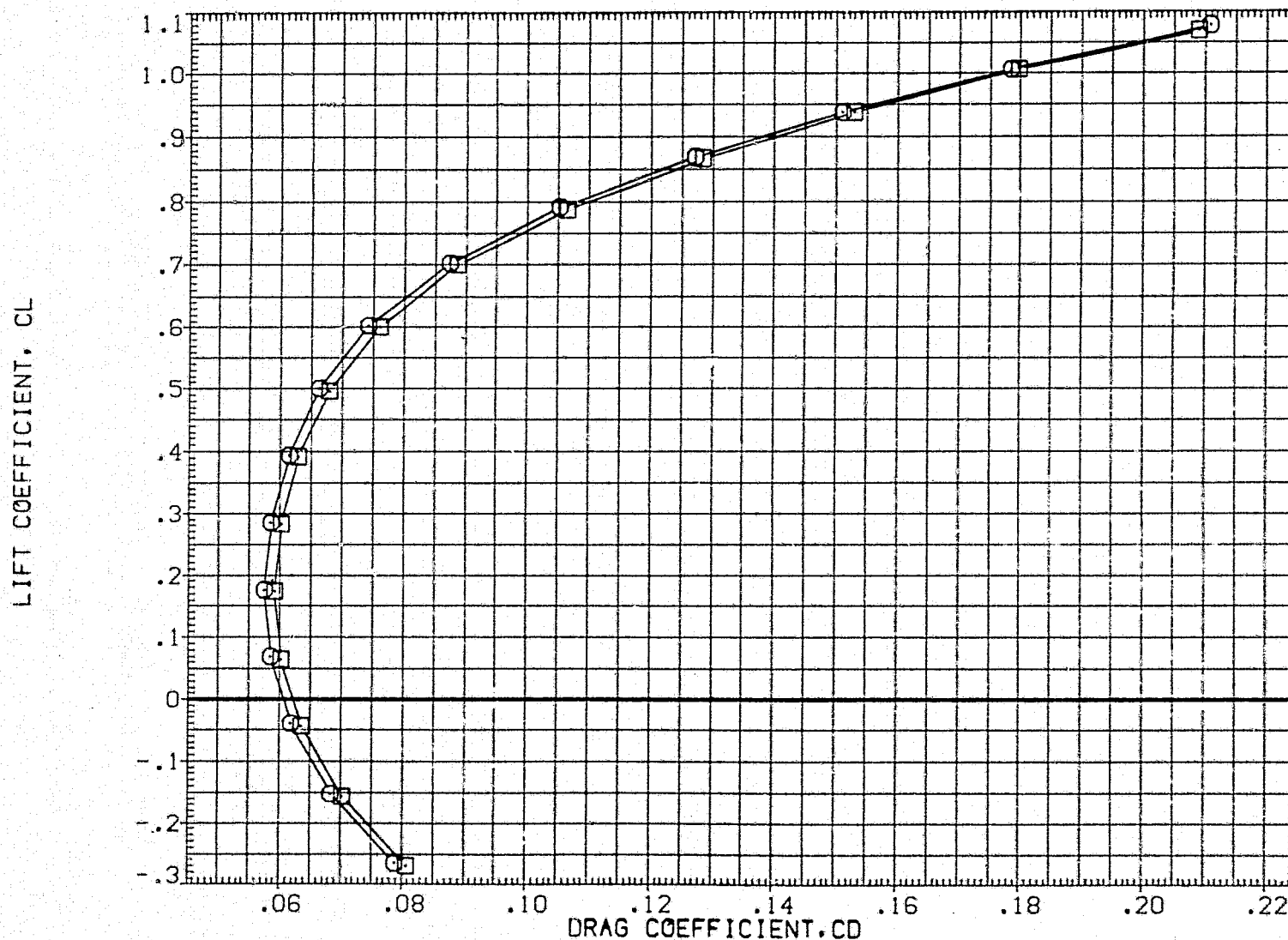


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY  
(CD)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(R3M125)  $\square$  CA5 K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )  
 (R3M117)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )

STAB 10RB S5-6  
 -2.000 4.000 .000  
 -2.000 4.000 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

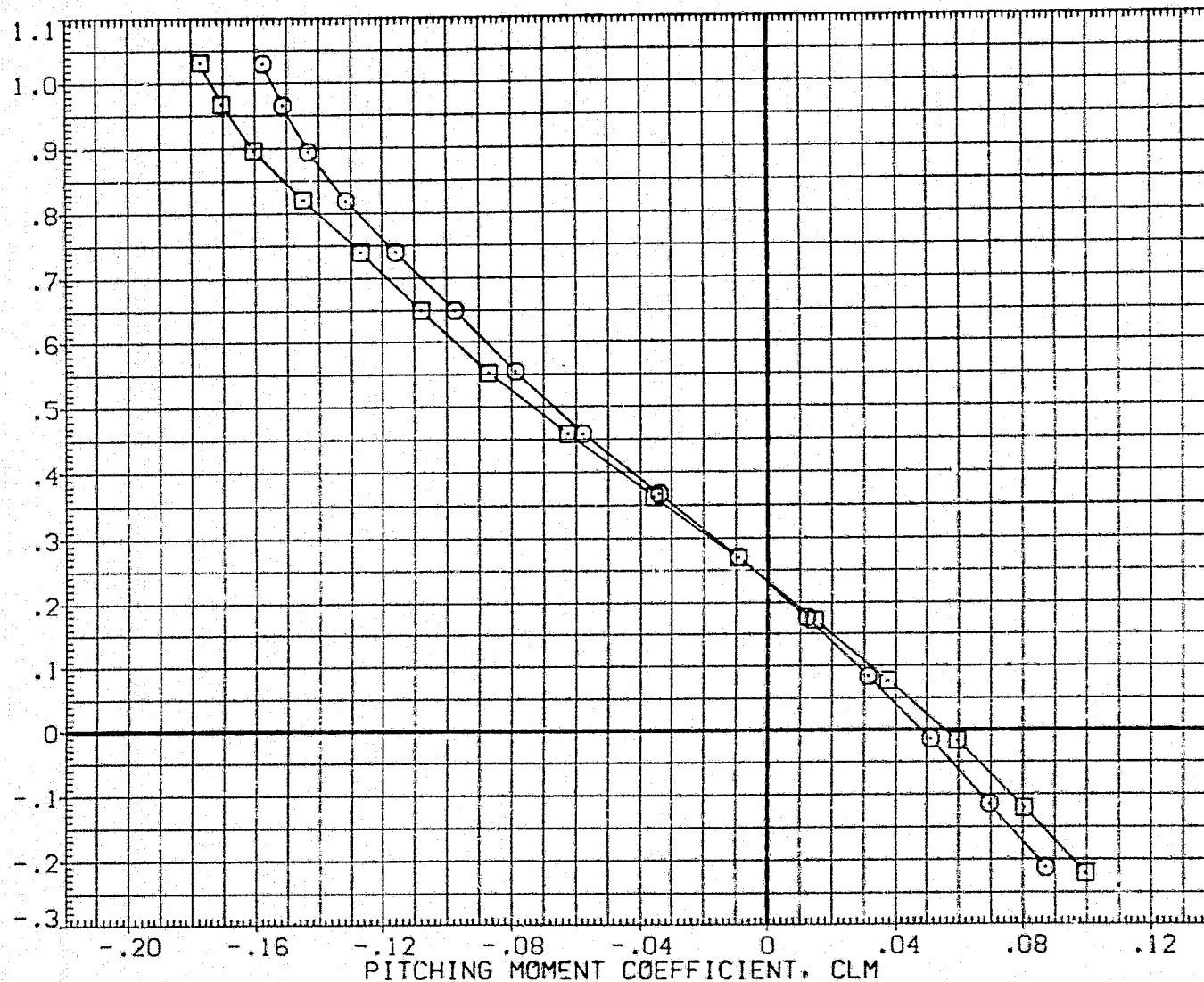


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ICRB	S5-6	REFERENCE INFORMATION		
(RGM125)	○ CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	4.000	.000	SREF	5500.0000	50. FT.
(RGM117)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	4.000	.000	LREF	327.8000	IN.
					BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

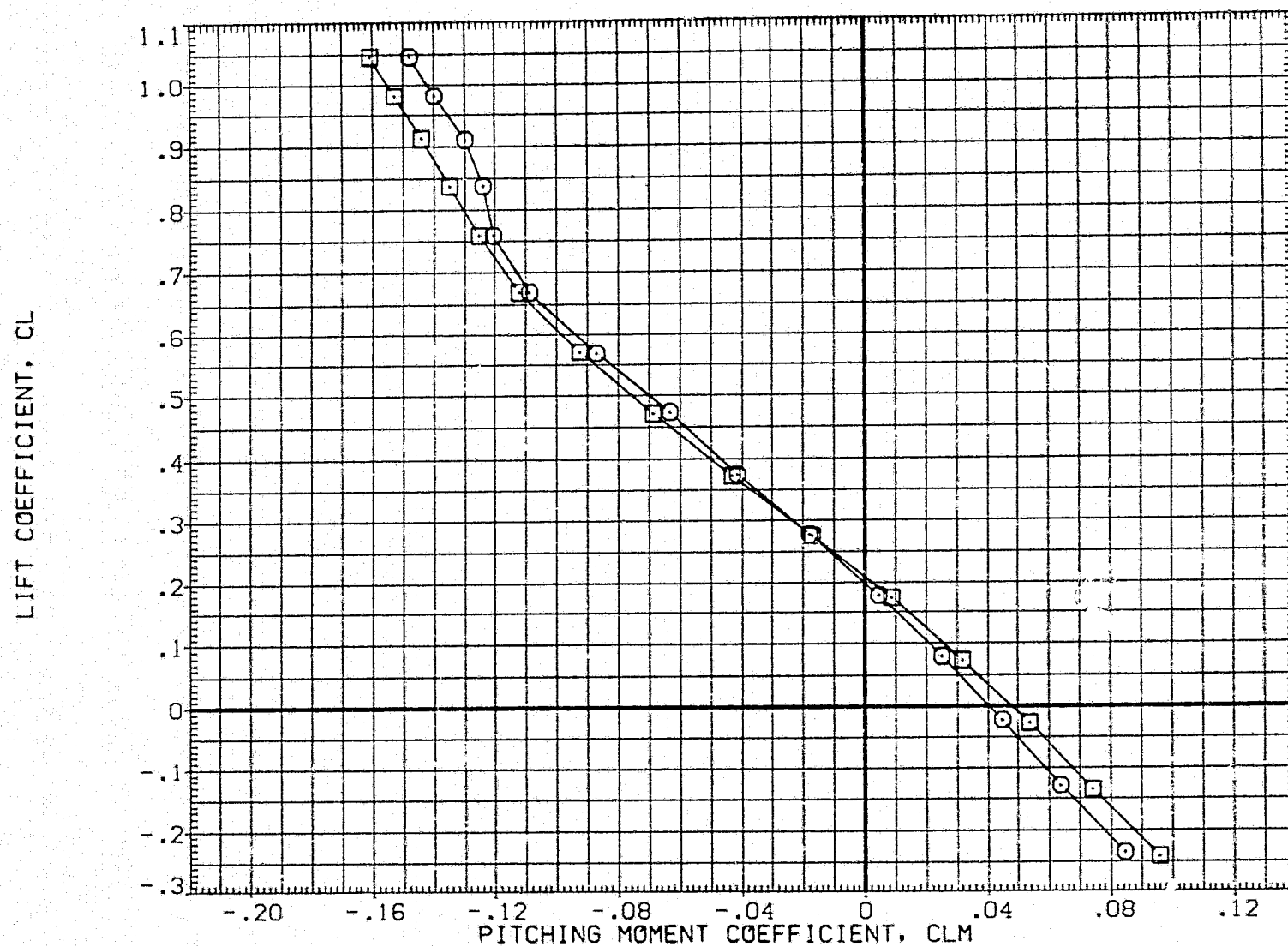


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(B)MACH = .50



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM125)  $\square$  CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM117)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )

STAB 10RB SS-6  
 -2.000 4.000 .000  
 -2.000 4.000 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

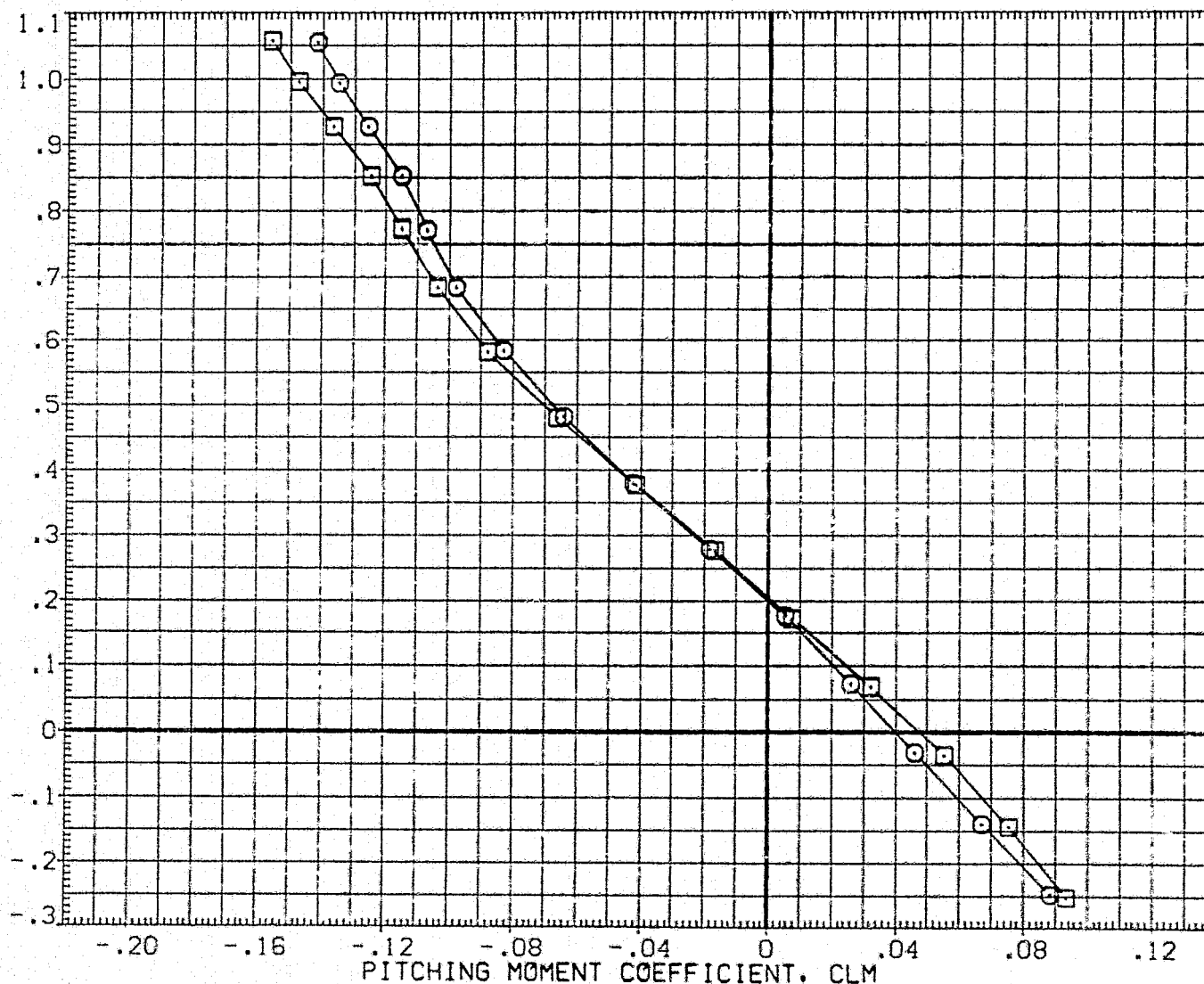


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM125)	○	CAS	K1	FO	H15.1A	V9.1	(PLUS. ORB TCS AT38.3 )
(RGM117)	□	CAS	K1	FO	H15.6	V9.1	(PLUS. ORB TCS AT38.3 )

STAB

ICRB

SS-6

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

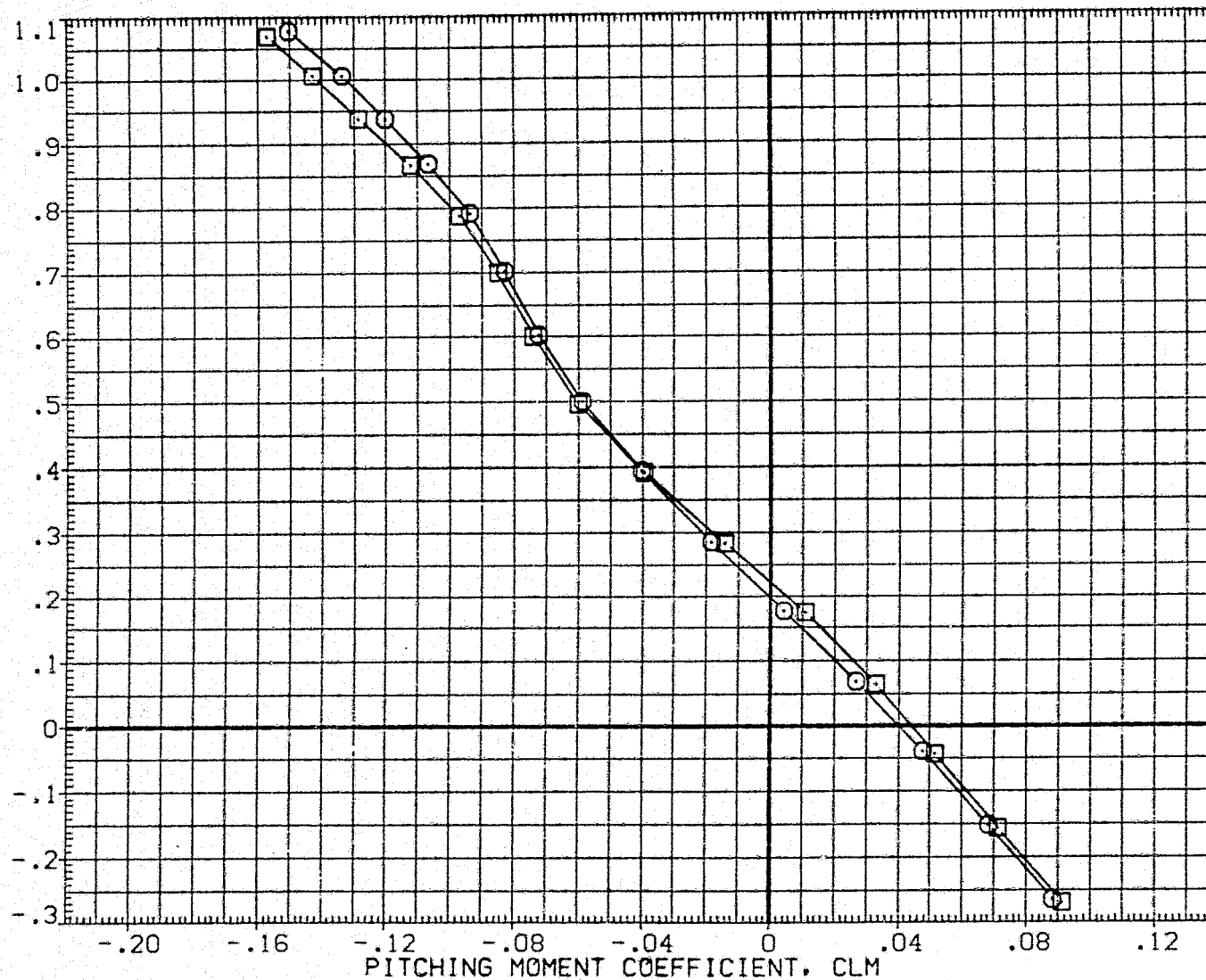


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(D)MACH = .70

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM125)  $\square$  CAS KI FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM117)  $\circ$  CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )

STAB

-2.000  
-2.000

IORB

4.000  
4.000

SS-6

.000  
.000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

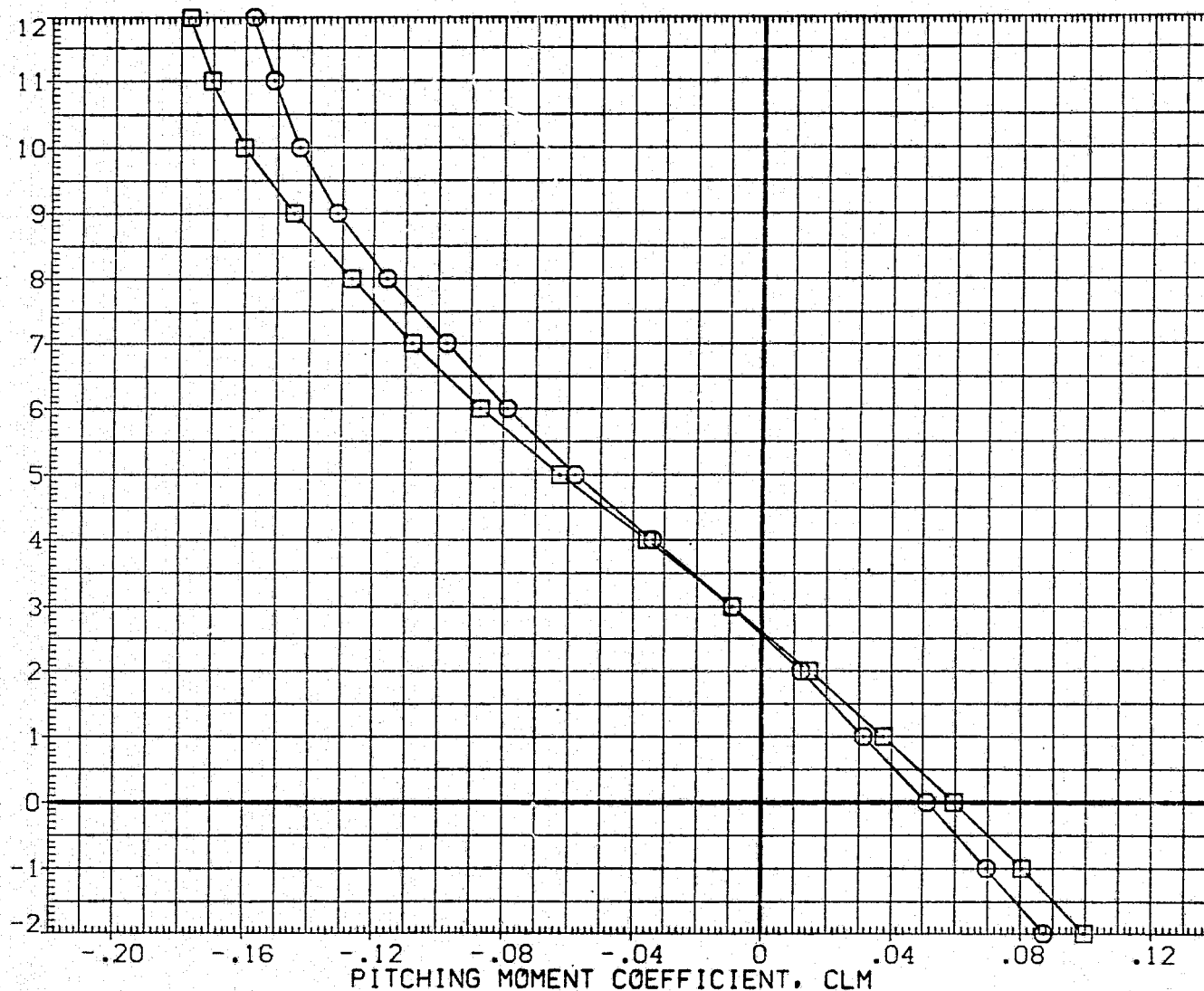


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM125) ☐ CAS K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM117) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )

STAB TORB SS-6  
 -2.000 4.000 .000  
 -2.000 4.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

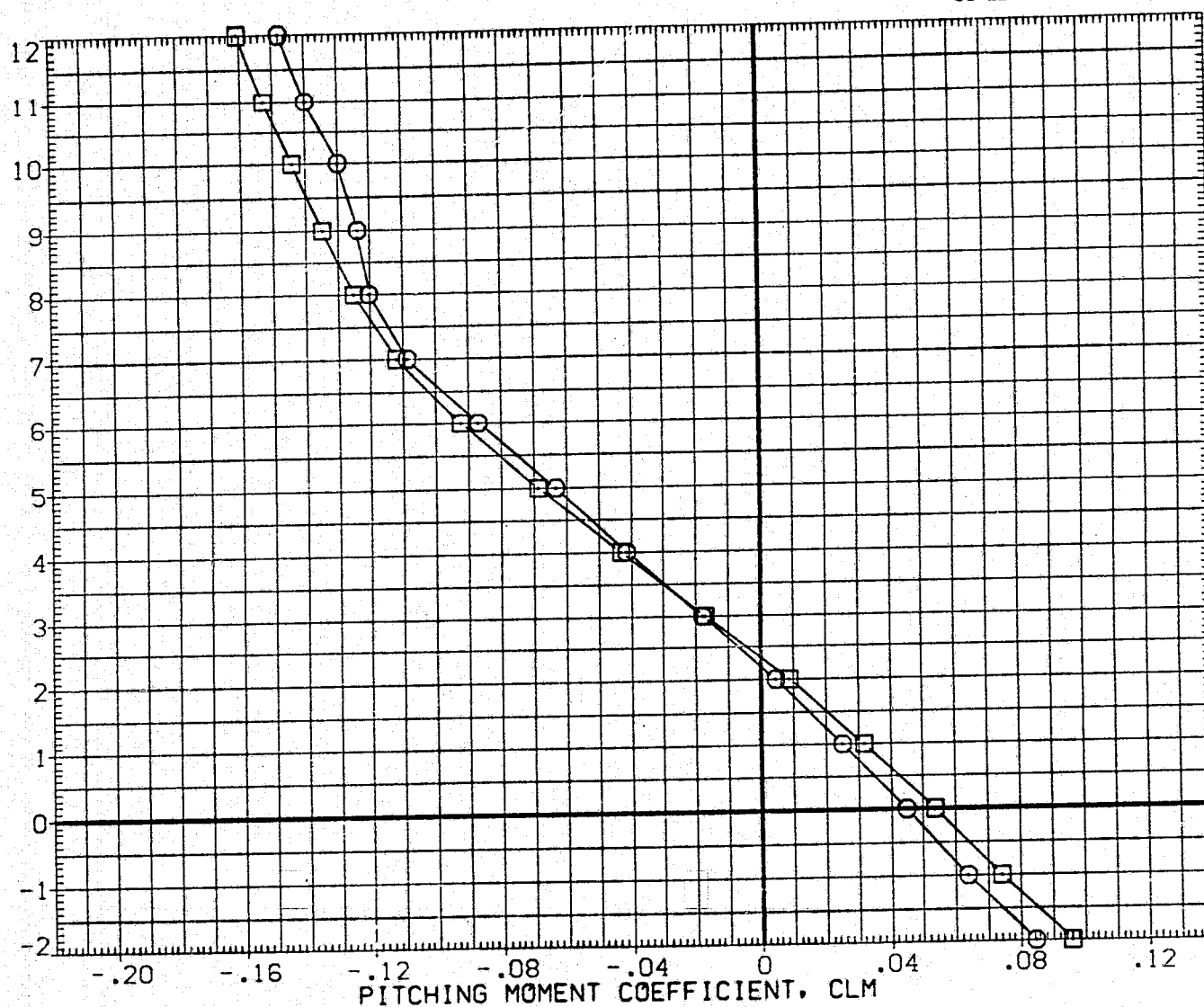


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY  
 (B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM125) ☐ CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM117) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )

STAB 10RB SS-6  
 -2.000 4.000 .000  
 -2.000 4.000 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

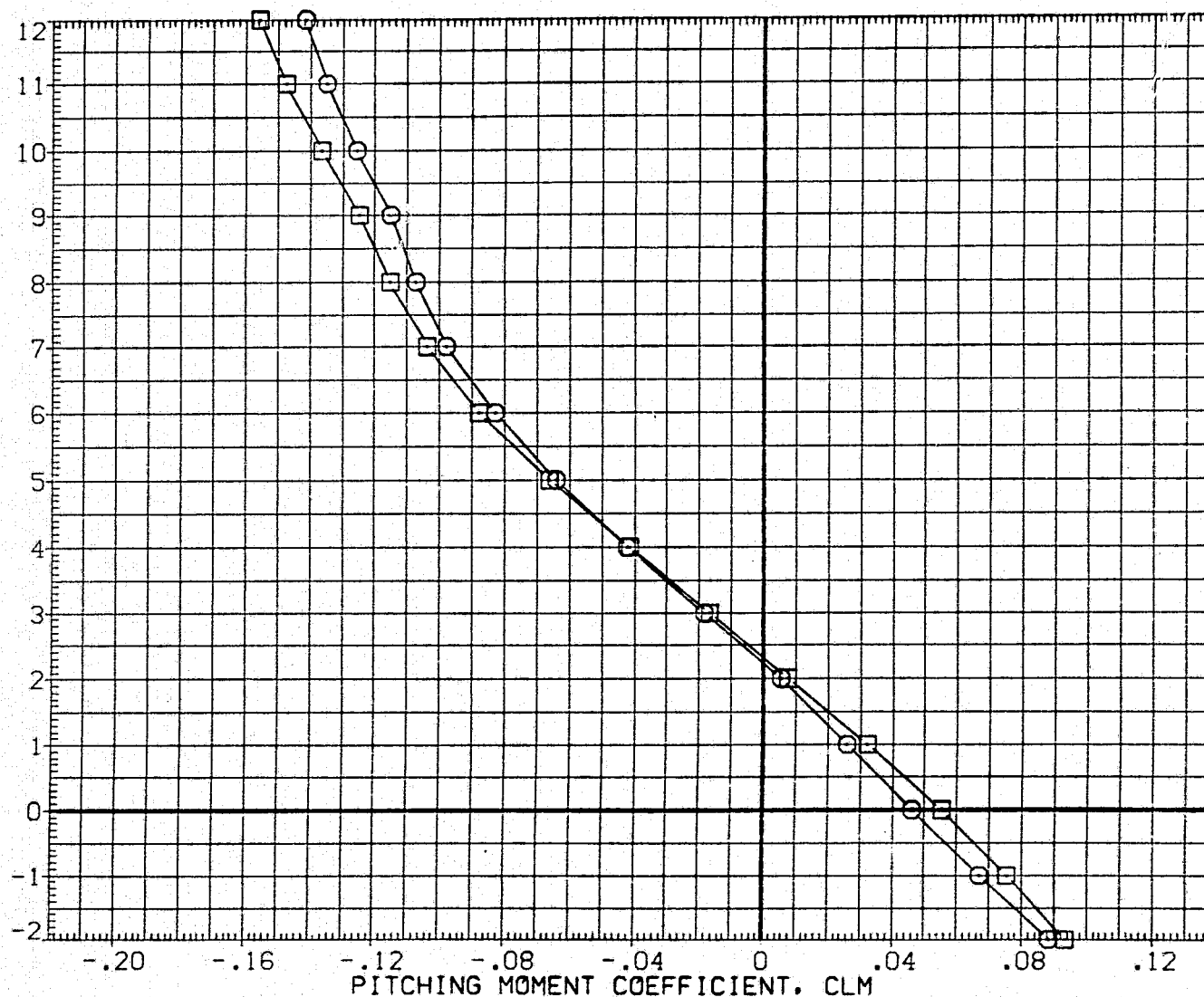


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM125)  $\square$  CAS K1 FO HIS.1A VS.1 (PLUS. ORB TCS AT38.3 )  
 (RGM117)  $\square$  CAS K1 FO HIS.6 VS.1 (PLUS. ORB TCS AT38.3 )

STAB

-2.000  
 -2.000

IORB

4.000  
 4.000

S5-6

.000  
 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

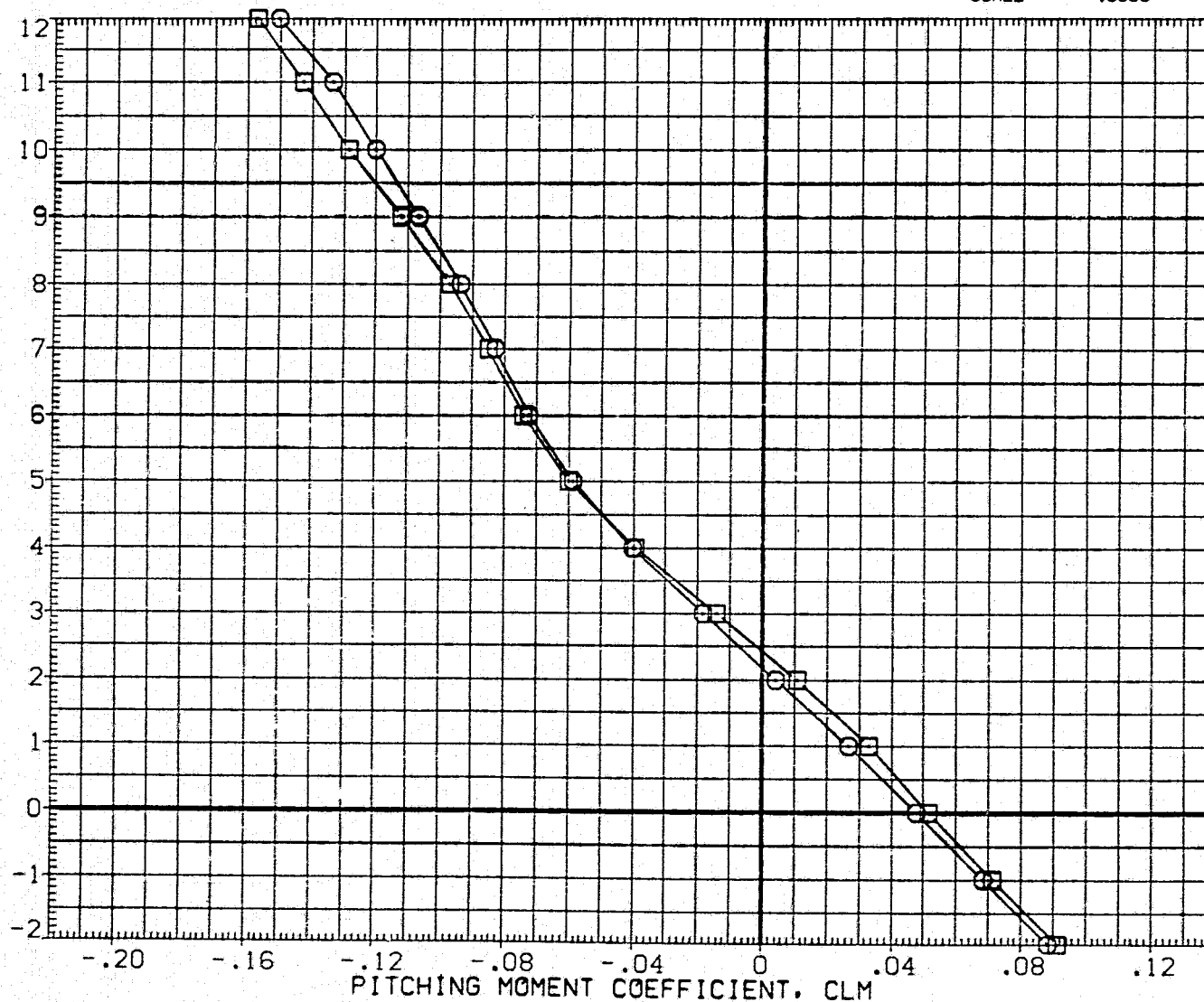


FIG.225 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMO58) $\square$	BTWT-1431CAS KI F20 H15.1A V9.1
(RGMO59) $\square$	BTWT-1431CAS KI F20 H15.6 V9.1

STAB	S5-6
1.000	.000
1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

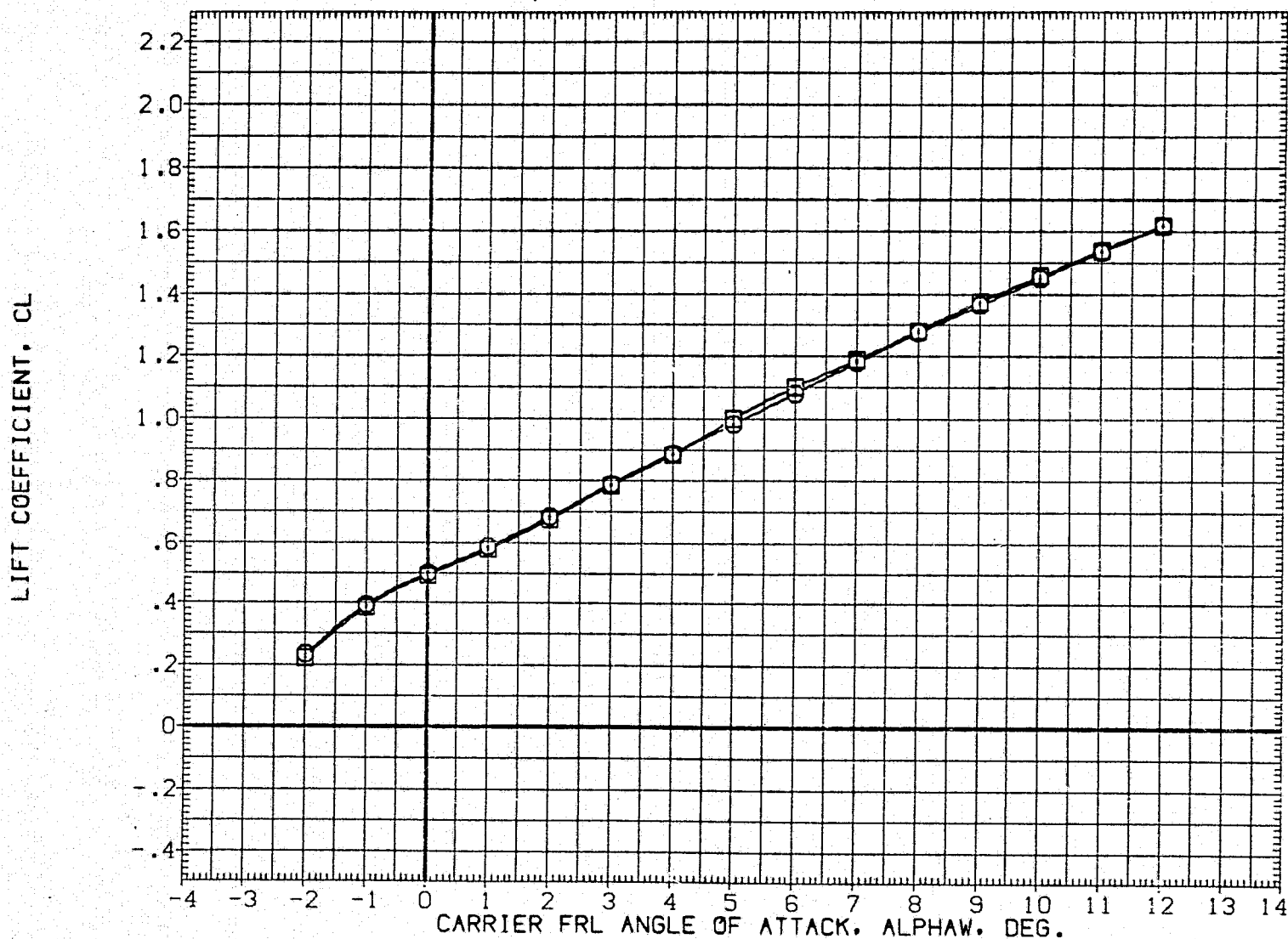




FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(A)MACH = .15

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM058)  BTWT-1431CA5 K1 F20 H15.1A V9.1  
 (RGM059)  BTWT-1431CA5 K1 F20 H15.6 V9.1

STAB S5-6  
 1.000 .000  
 1.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

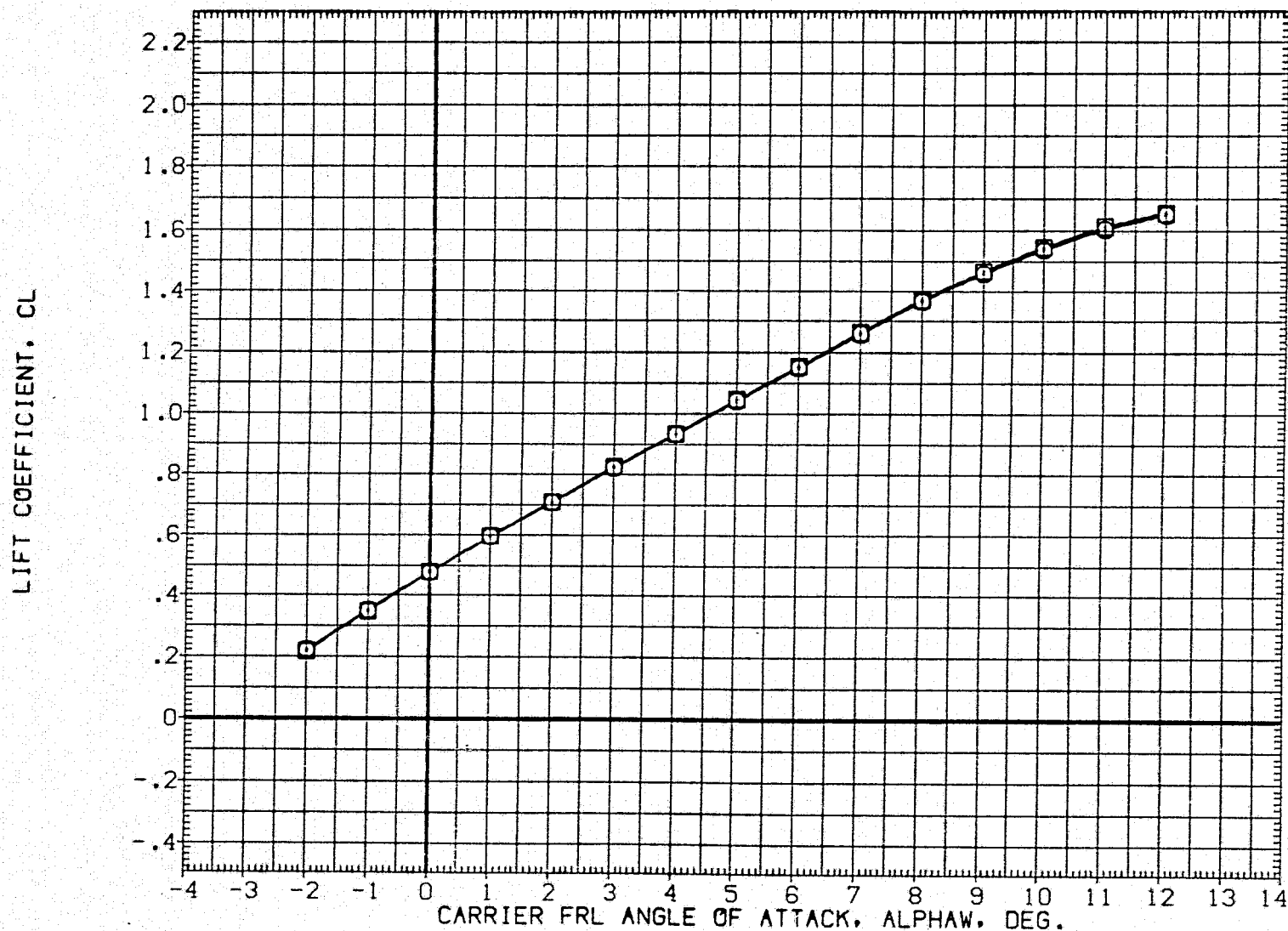




FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(B)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM058) 	BTWT-1431CAS KI F20 H15.1A V9.1
(RGM059) 	BTWT-1431CAS KI F20 H15.6 V9.1

STAB	S5-6
1.000	.000
1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

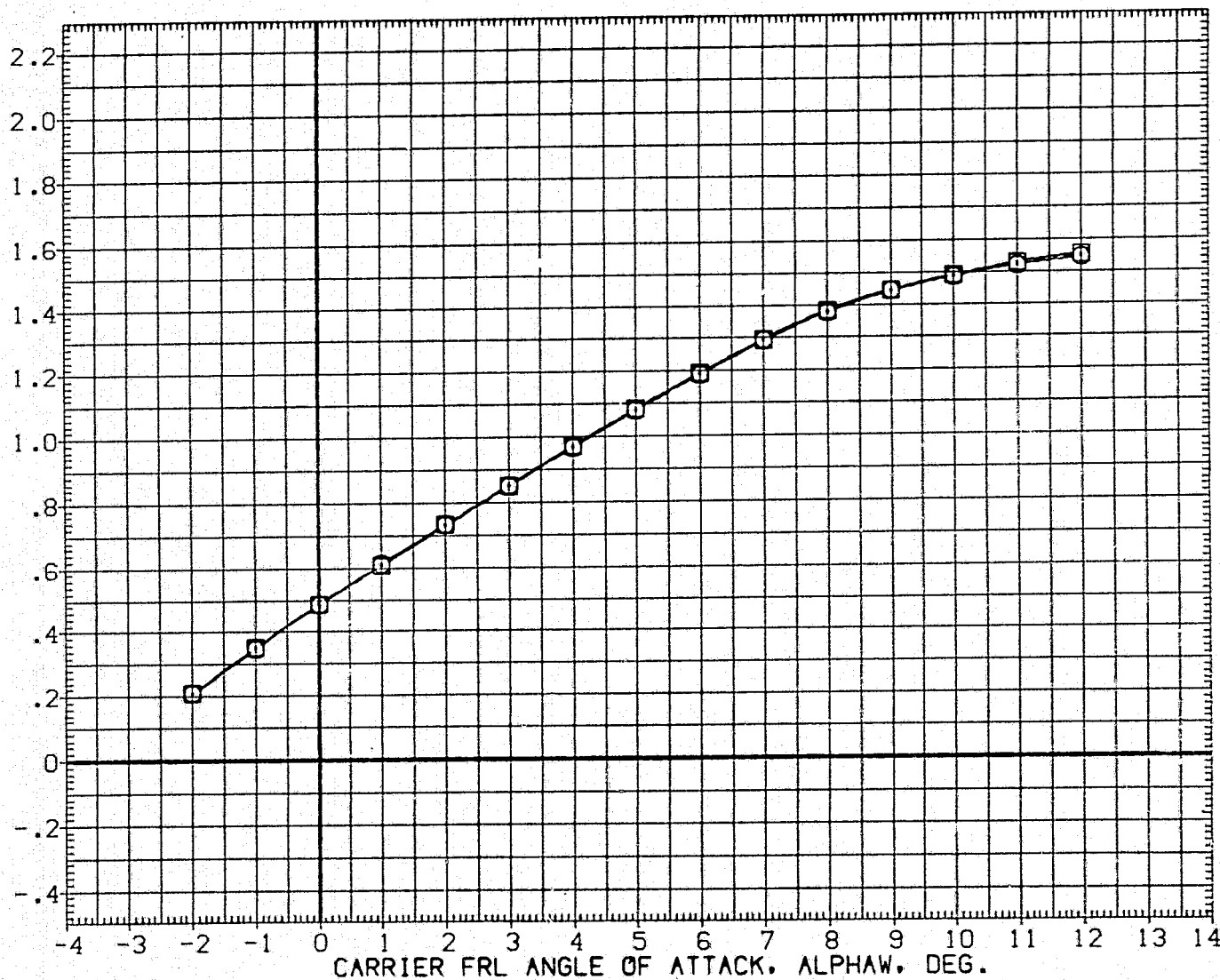


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM058) BTVT-1431CA5 K1 F20 H15.1A V9.1  
 (RGM059) BTVT-1431CA5 K1 F20 H15.6 V9.1

STAB 55-6  
 1.000 .000  
 1.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

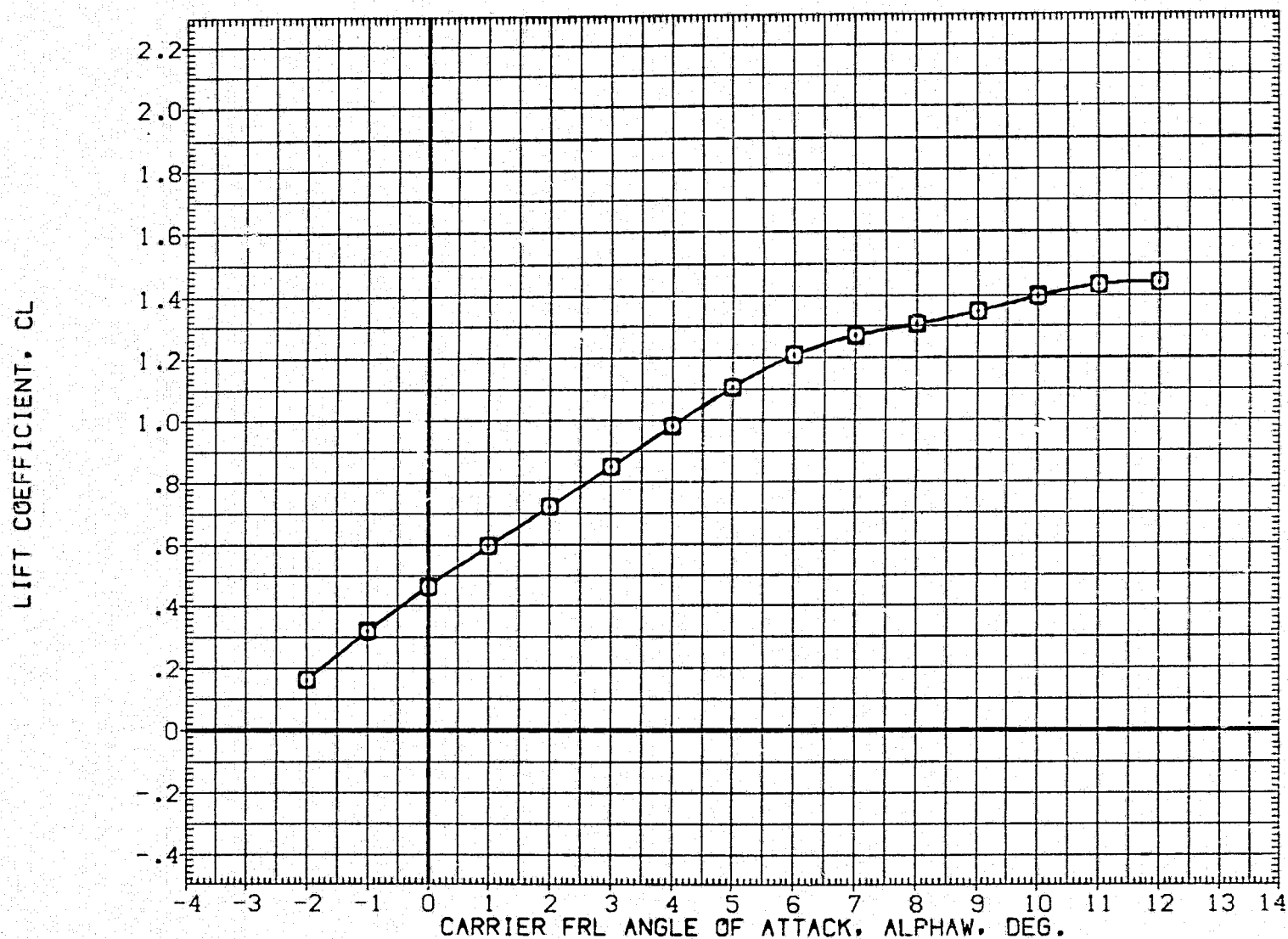




FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20  
 (D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGH058) 	BTWT-1431CA5 K1 F20 H15.1A V9.1
(RGH059) 	BTWT-1431CA5 K1 F20 H15.6 V9.1

STAB	S5-6
1.000	.000
1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

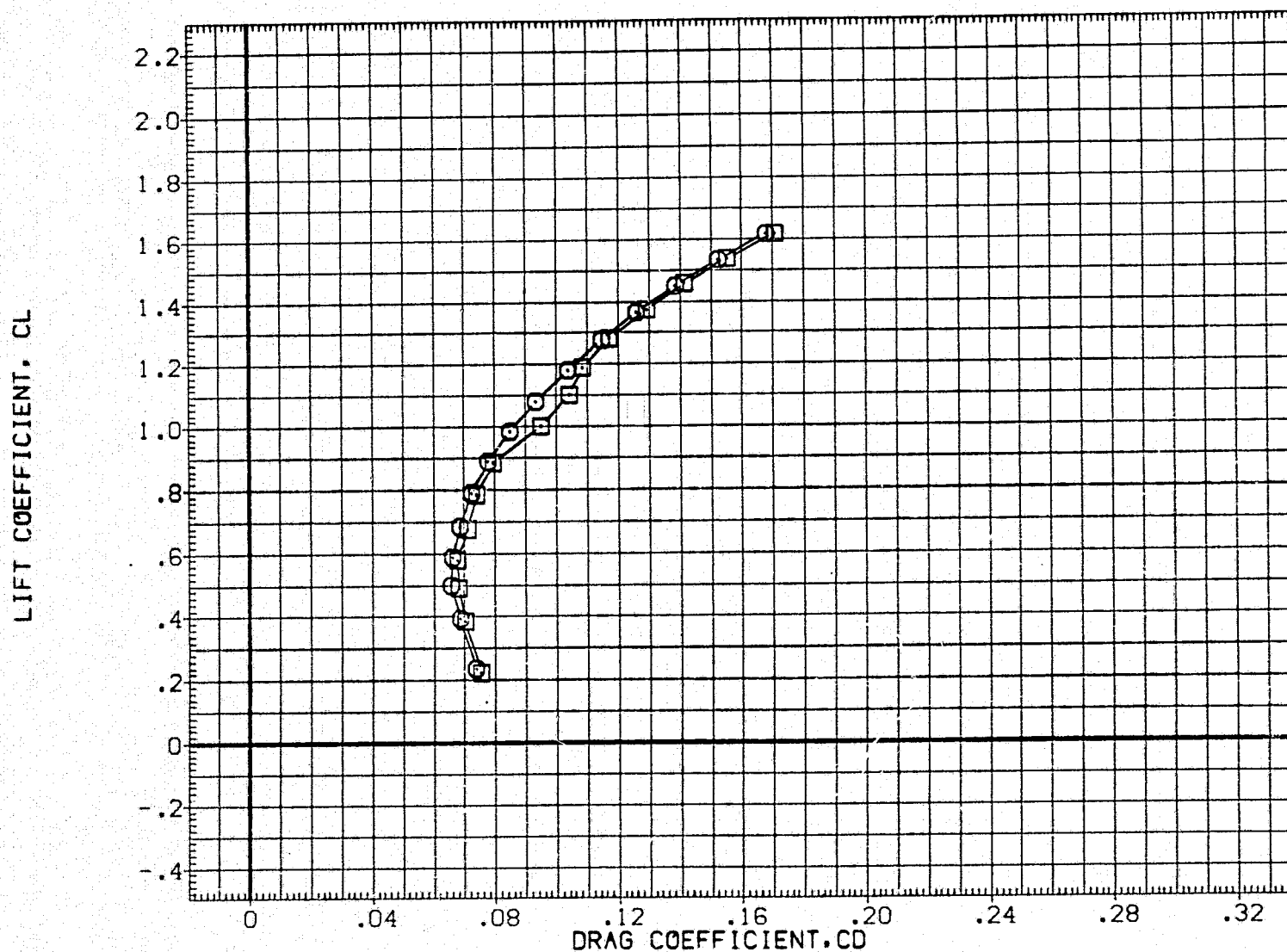


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20  
 (A)MACH = .15

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM058)  $\square$  BTVT-1431CAS K1 F20 H15.1A V9.1  
 (RGM059)  $\square$  BTVT-1431CAS K1 F20 H15.6 V9.1

STAB SS-6  
 1.000 .000  
 1.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT. CL

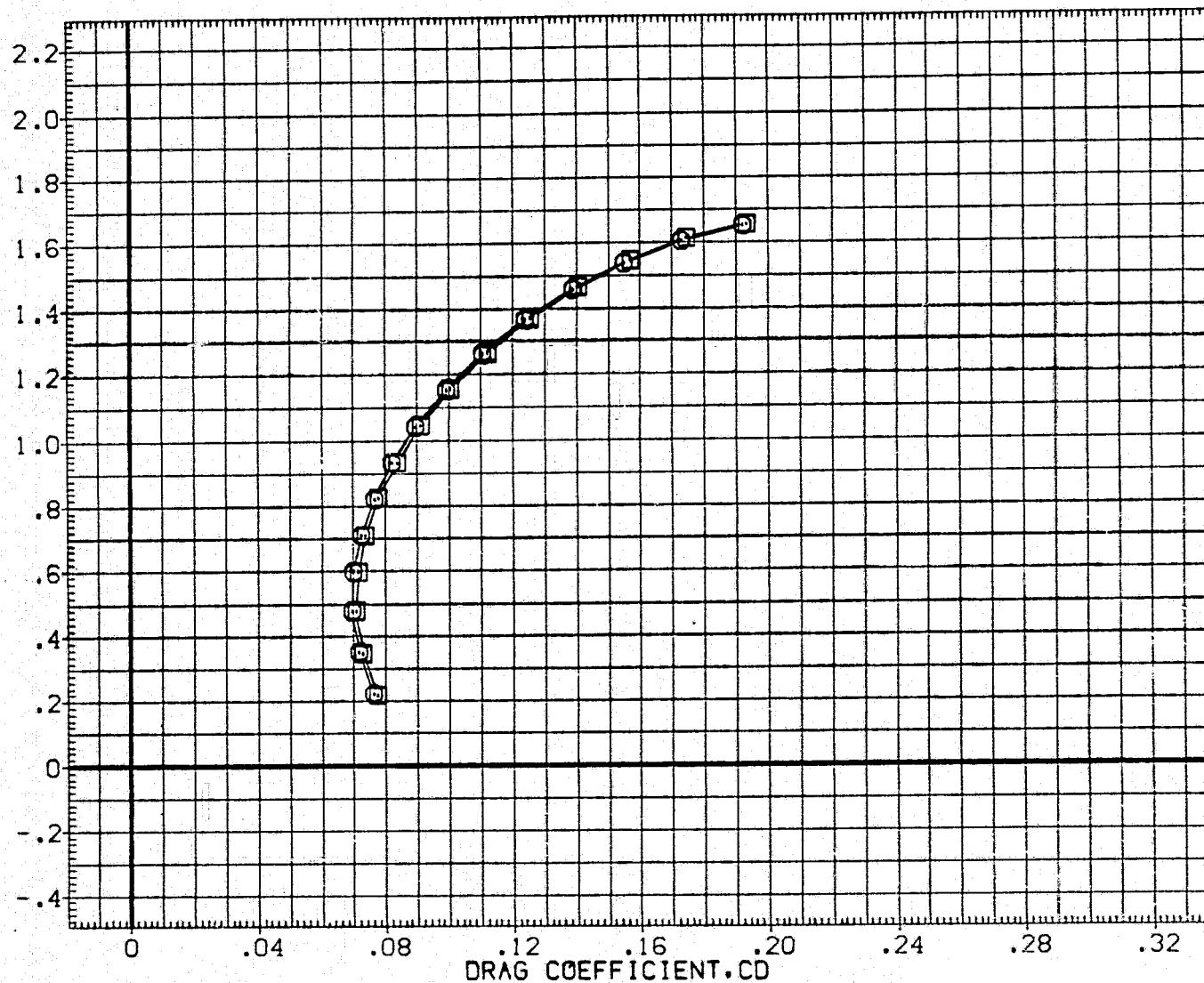


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20  
 (B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM058) ○	BTWT-1431CA5 KI F20 HIS.1A V9.1
(RGM059) □	BTWT-1431CA5 KI F20 HIS.6 V9.1

STAB	SS-6
1.000	.000
1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

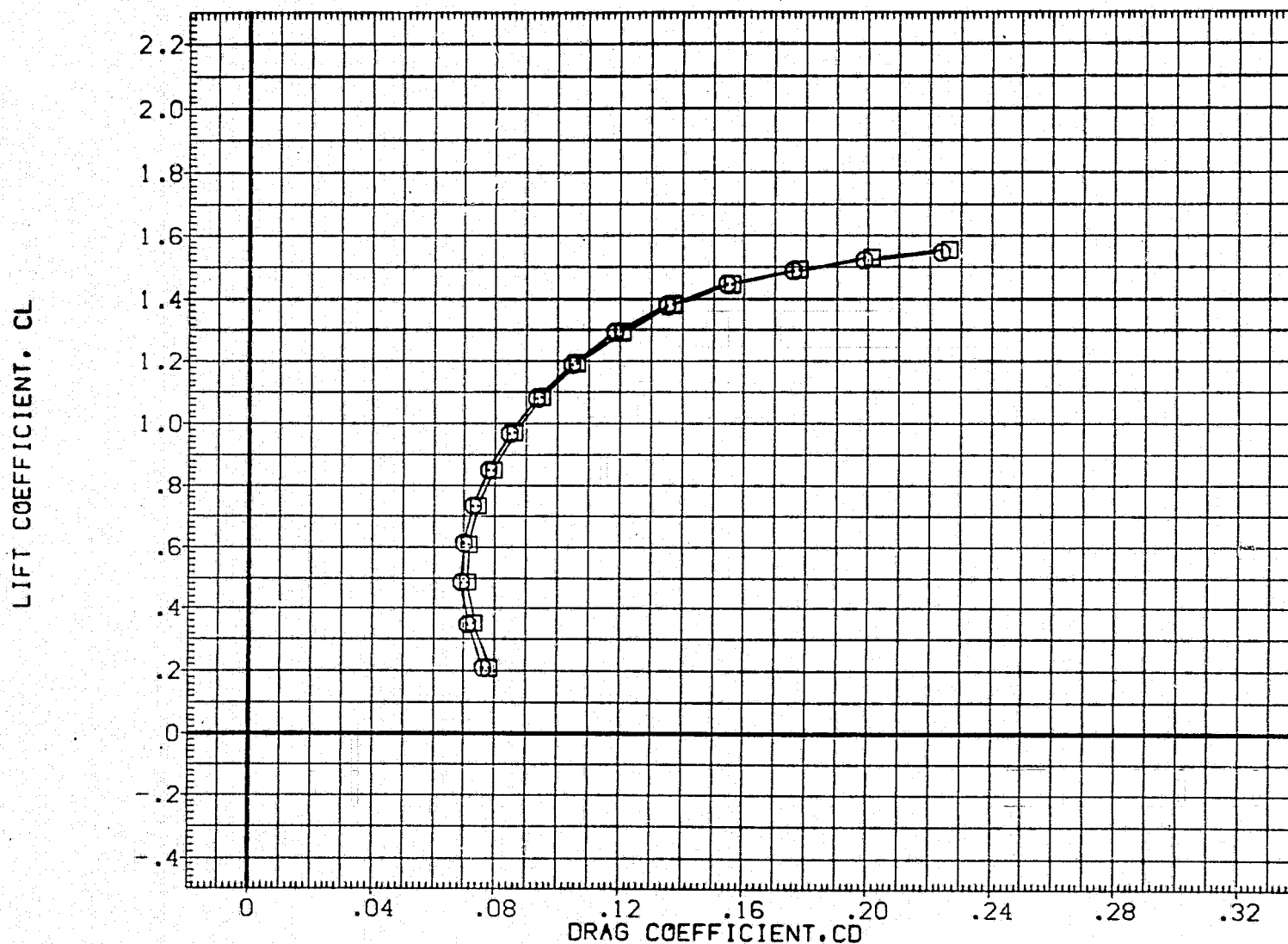


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM058) BTWT-1431CA5 K1 F20 H15.1A V9.1  
 (RGM059) BTWT-1431CA5 K1 F20 H15.6 V9.1

STAB S5-6  
 1.000 .000  
 1.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

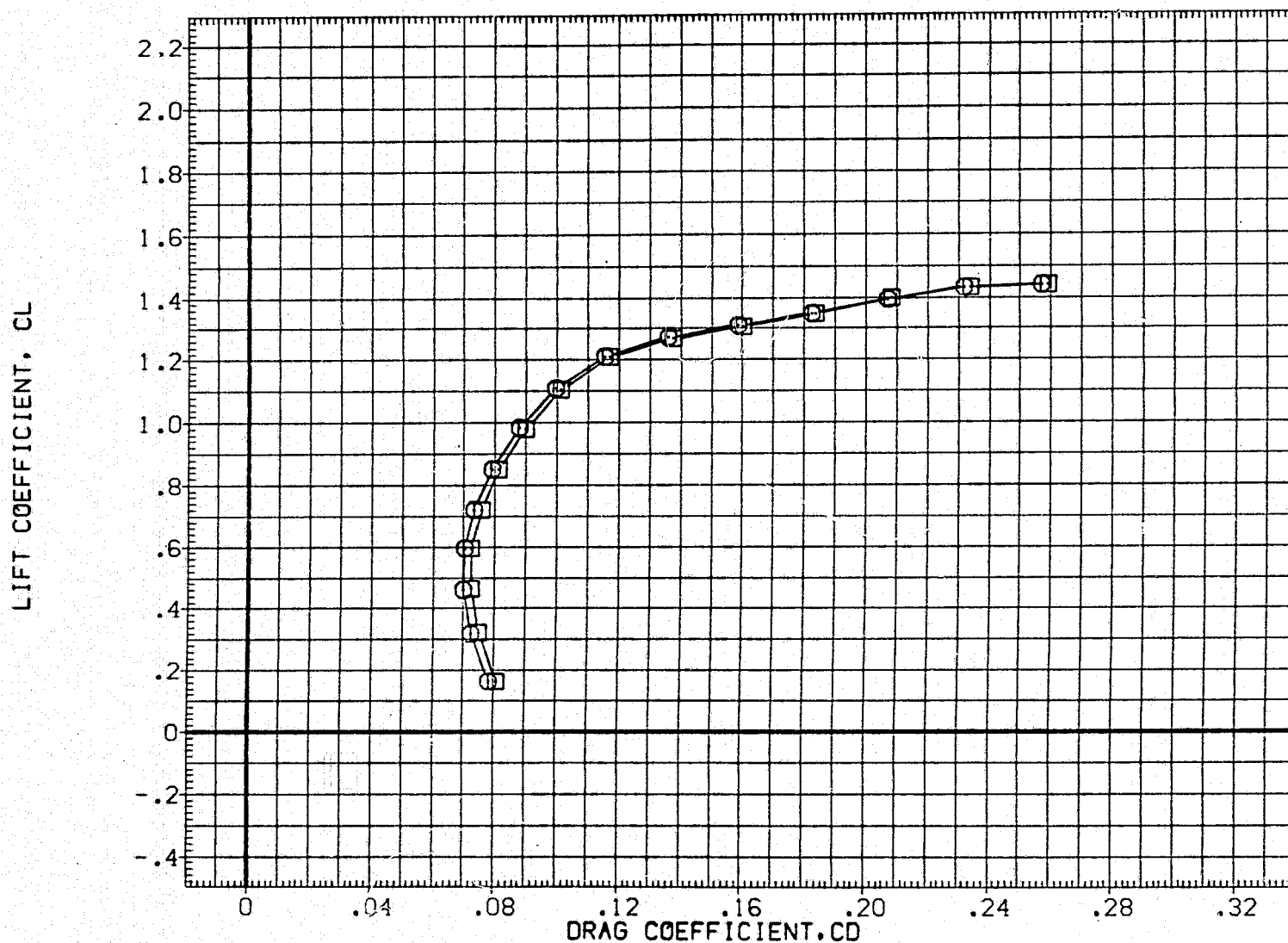


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20  
 (D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM058) $\square$	BTWT-1431CA5 KI F20 HIS.1A V9.1
(RGM059) $\square$	BTWT-1431CA5 KI F20 HIS.6 V9.1

STAB	S5-6
1.000	.000
1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

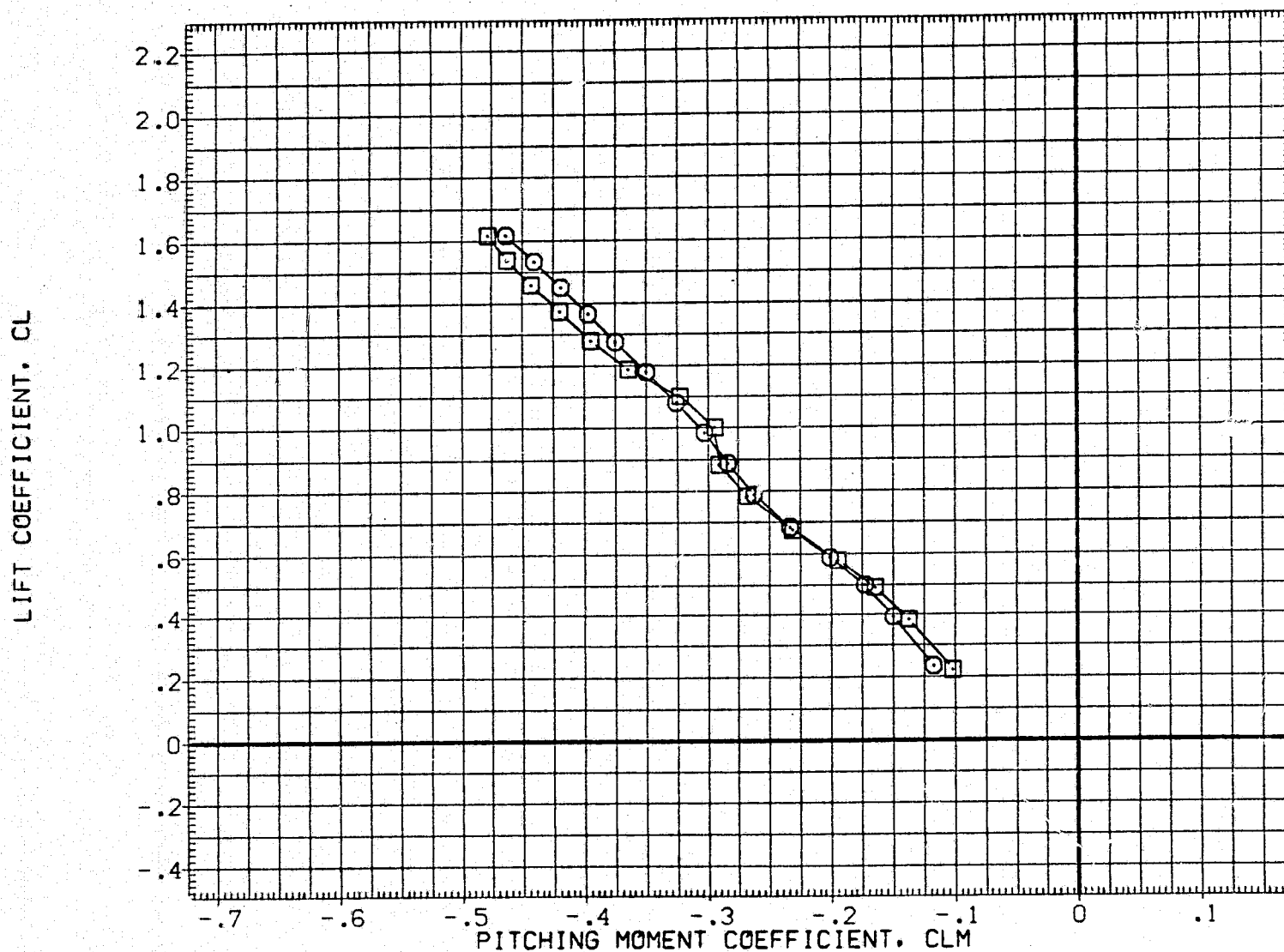


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20  
 (A)MACH = .15

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM058) ☐ BTWT-1431CA5 K1 F20 H15.1A V9.1  
 (RGM059) ☐ BTWT-1431CA5 K1 F20 H15.6 V9.1

STAB SS-6  
 1.000 .000  
 1.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

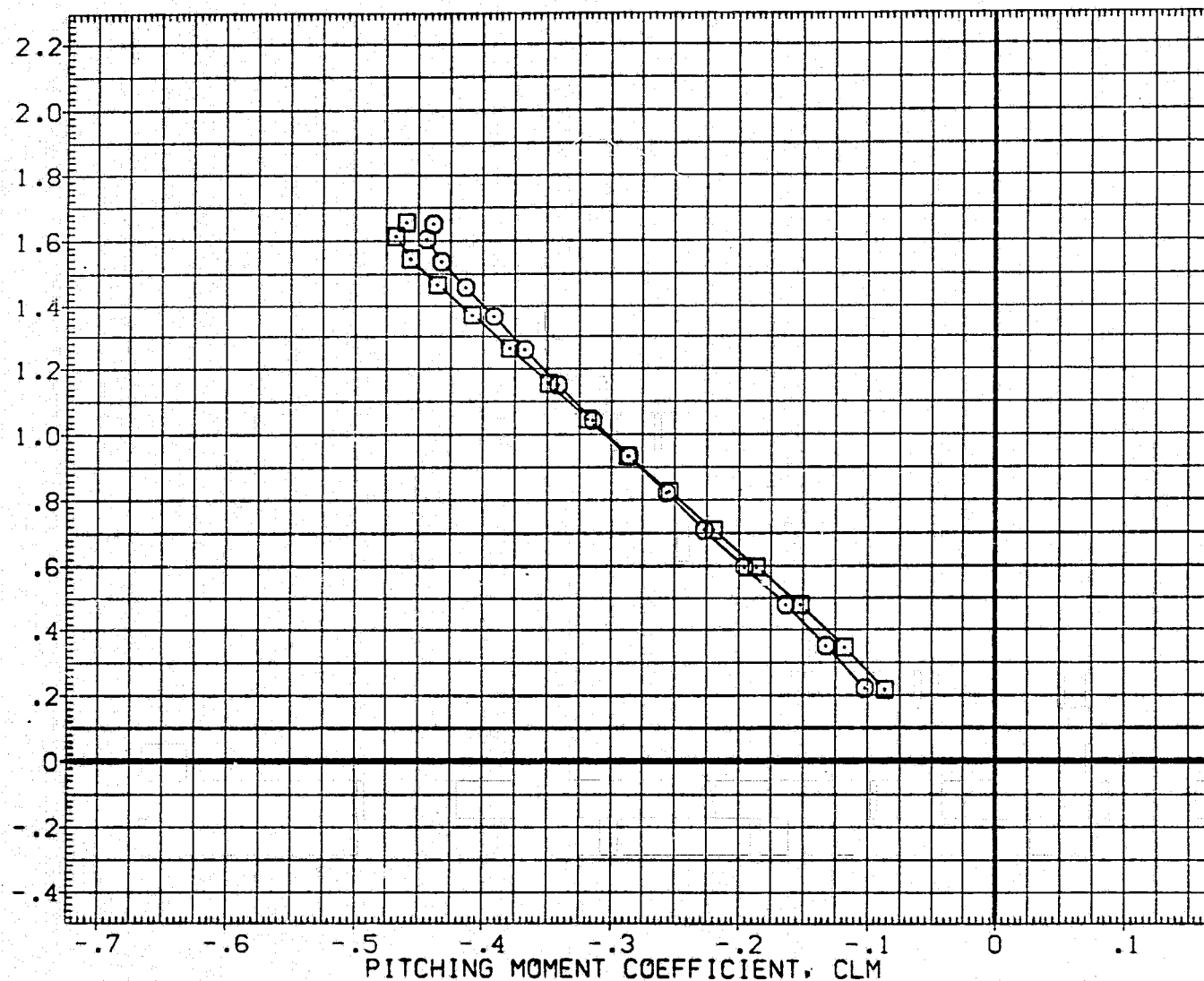


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(B)MACH = .50



DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (RGM058)    ☐    BTWT-1431CA5 KI F20 H15.1A V9.1  
 (RGM059)    ☐    BTWT-1431CA5 KI F20 H15.6 V9.1

STAB    S5-6  
 1.000    .000  
 1.000    .000

REFERENCE INFORMATION  
 SREF    5500.0000    SQ.FT.  
 LREF    327.8000    IN.  
 BREF    2348.0000    IN.  
 XMRP    1339.9100    IN. XC  
 YMRP    .0000    IN. YC  
 ZMRP    190.7500    IN. ZC  
 SCALE    .0300

LIFT COEFFICIENT, CL

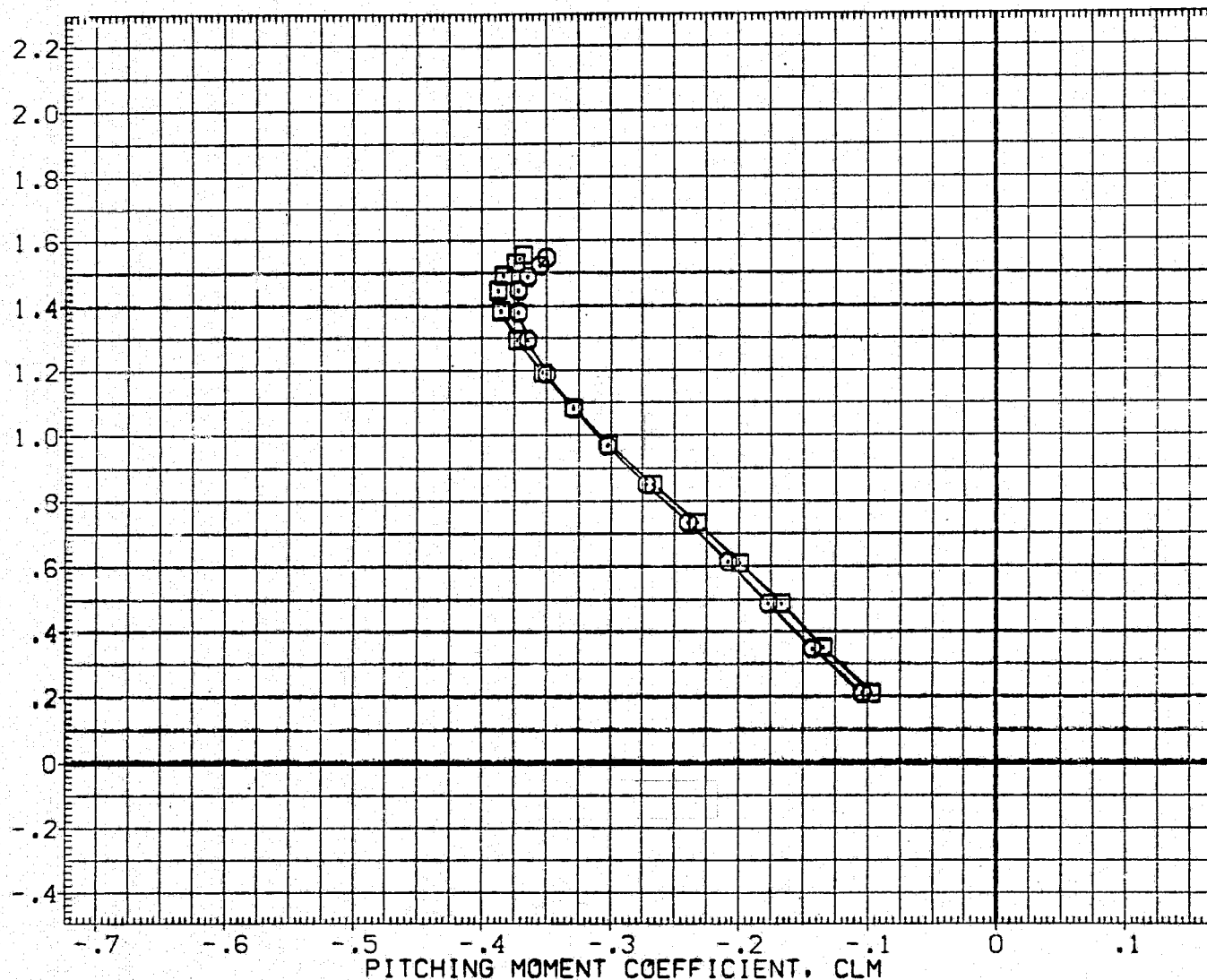


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO58)  $\square$  BTWT-1431CAS K1 F20 H15.1A V9.1  
 (RGMO59)  $\square$  BTWT-1431CAS K1 F20 H15.6 V9.1

STAB SS-6  
 1.000 .000  
 1.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

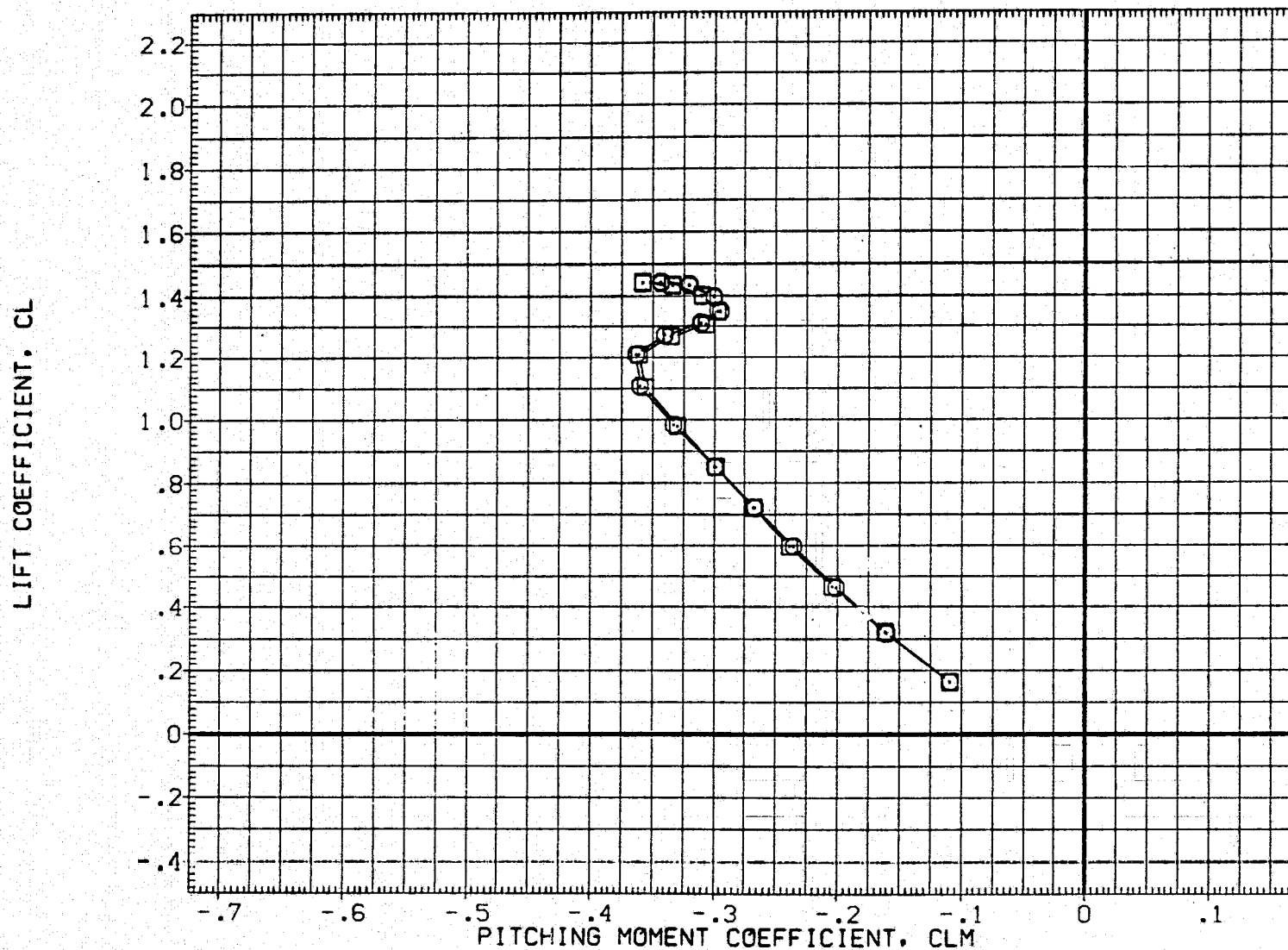


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(D)MACH = .70



DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
(RGM058)    ○    BTWT-1431CA5 KI F20 H15.1A V9.1  
(RGM059)    □    BTWT-1431CA5 KI F20 H15.6 V9.1

STAB    S5-6  
1.000    .000  
1.000    .000

REFERENCE INFORMATION  
SREF    5500.0000    SQ.FT.  
LREF    327.8000    IN.  
BREF    2348.0000    IN.  
XMRP    1339.9100    IN. XC  
YMRP    .0000    IN. YC  
ZMRP    190.7500    IN. ZC  
SCALE    .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

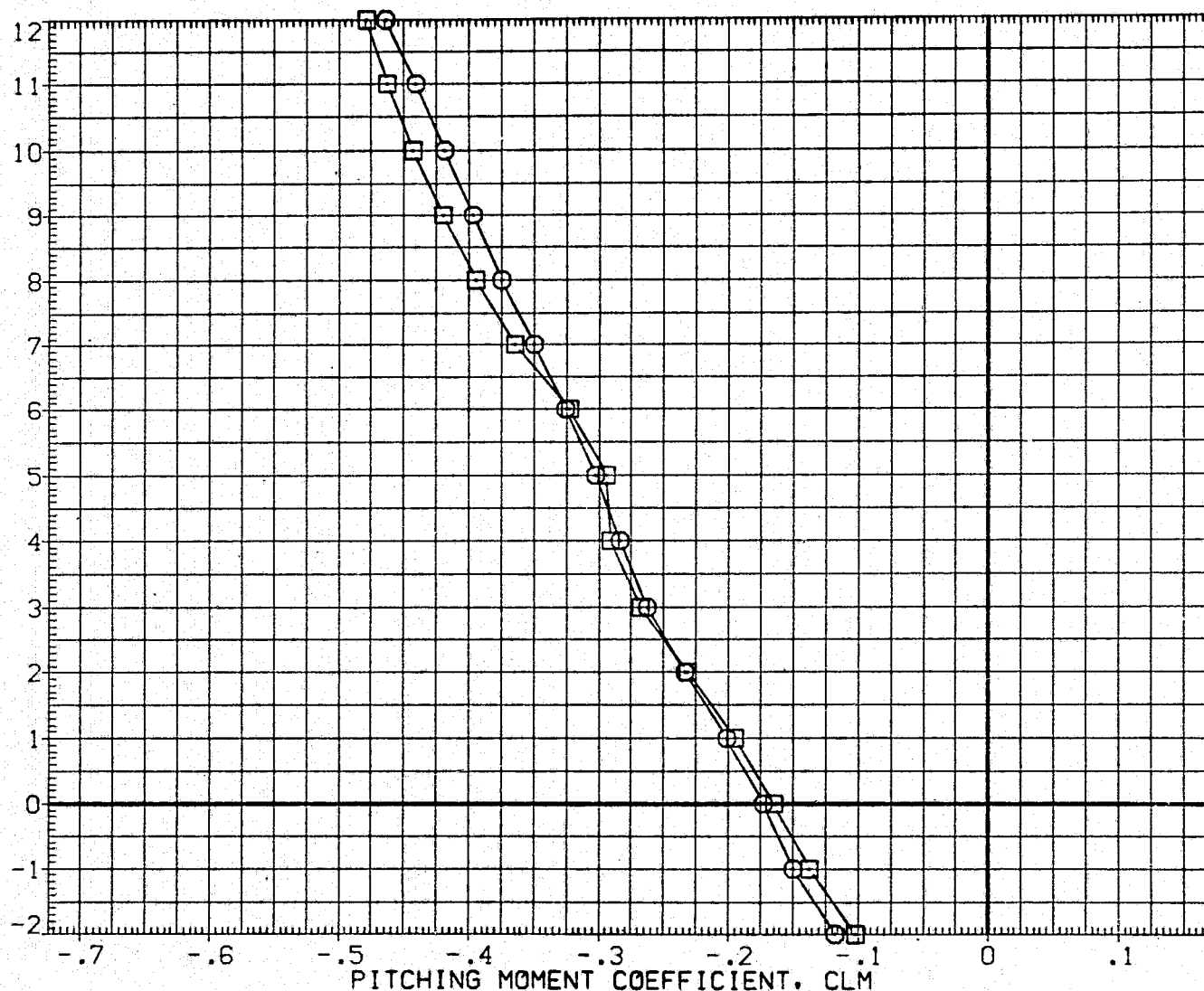


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(A)MACH = .15

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (RGM058)     $\square$     BTWT-1431CA5 K1 F20 H15.1A V9.1  
 (RGM059)     $\circ$     BTWT-1431CA5 K1 F20 H15.6 V9.1

STAB    S5-6  
 1.000    .000  
 1.000    .000

REFERENCE INFORMATION  
 SREF    5500.0000    SQ.FT.  
 LREF    327.8000    IN.  
 BREF    2348.0000    IN.  
 XMRP    1339.9100    IN. XC  
 YMRP    .0000    IN. YC  
 ZMRP    190.7500    IN. ZC  
 SCALE    .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

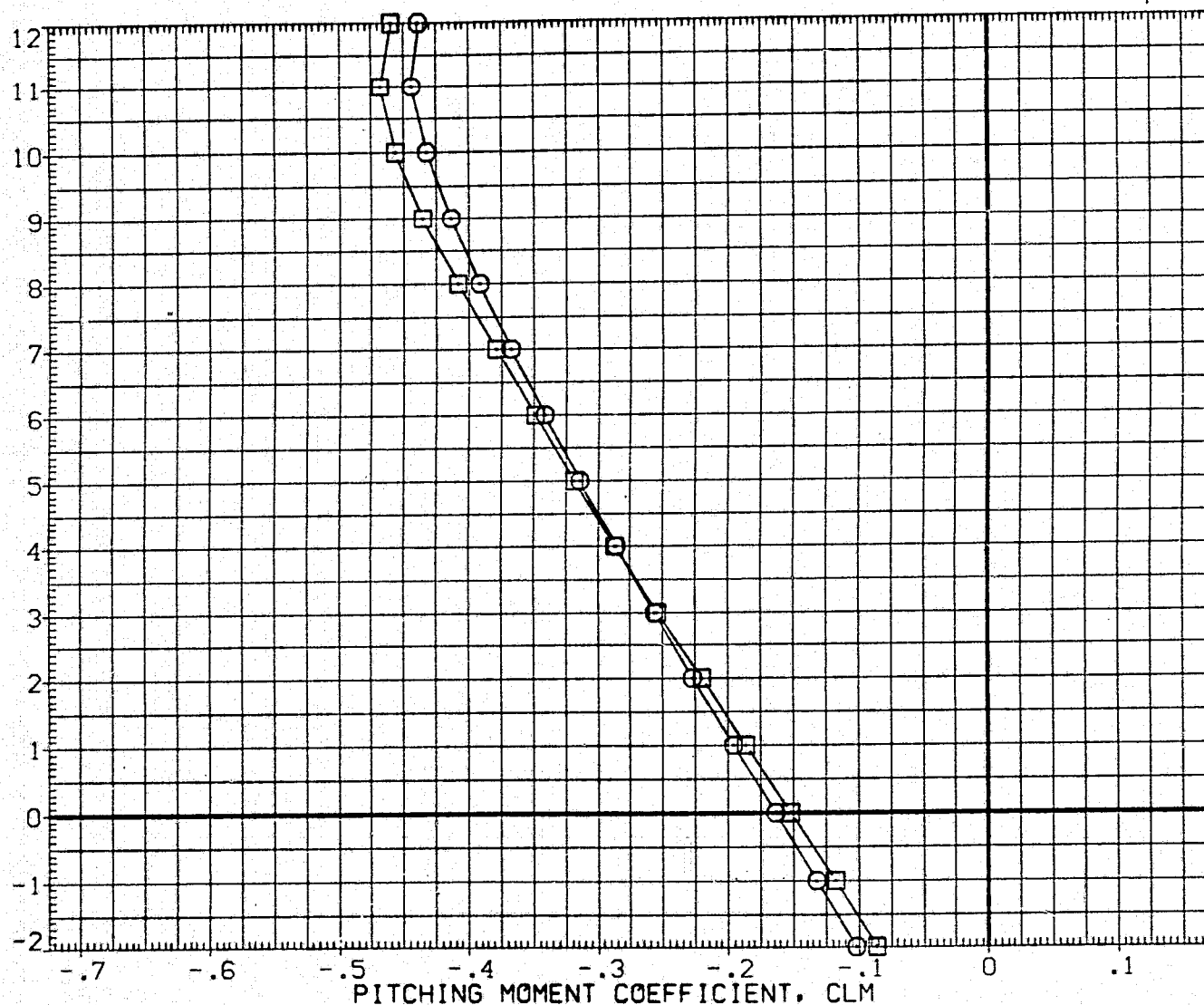


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20  
 (B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM058) $\square$	BTWT-1431CA5 KI F20 H15.1A V9.1
(RGM059) $\square$	BTWT-1431CA5 KI F20 H15.6 V9.1

STAB	SS-6
1.000	.000
1.000	.000

REFERENCE INFORMATION		
SREF	5300.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

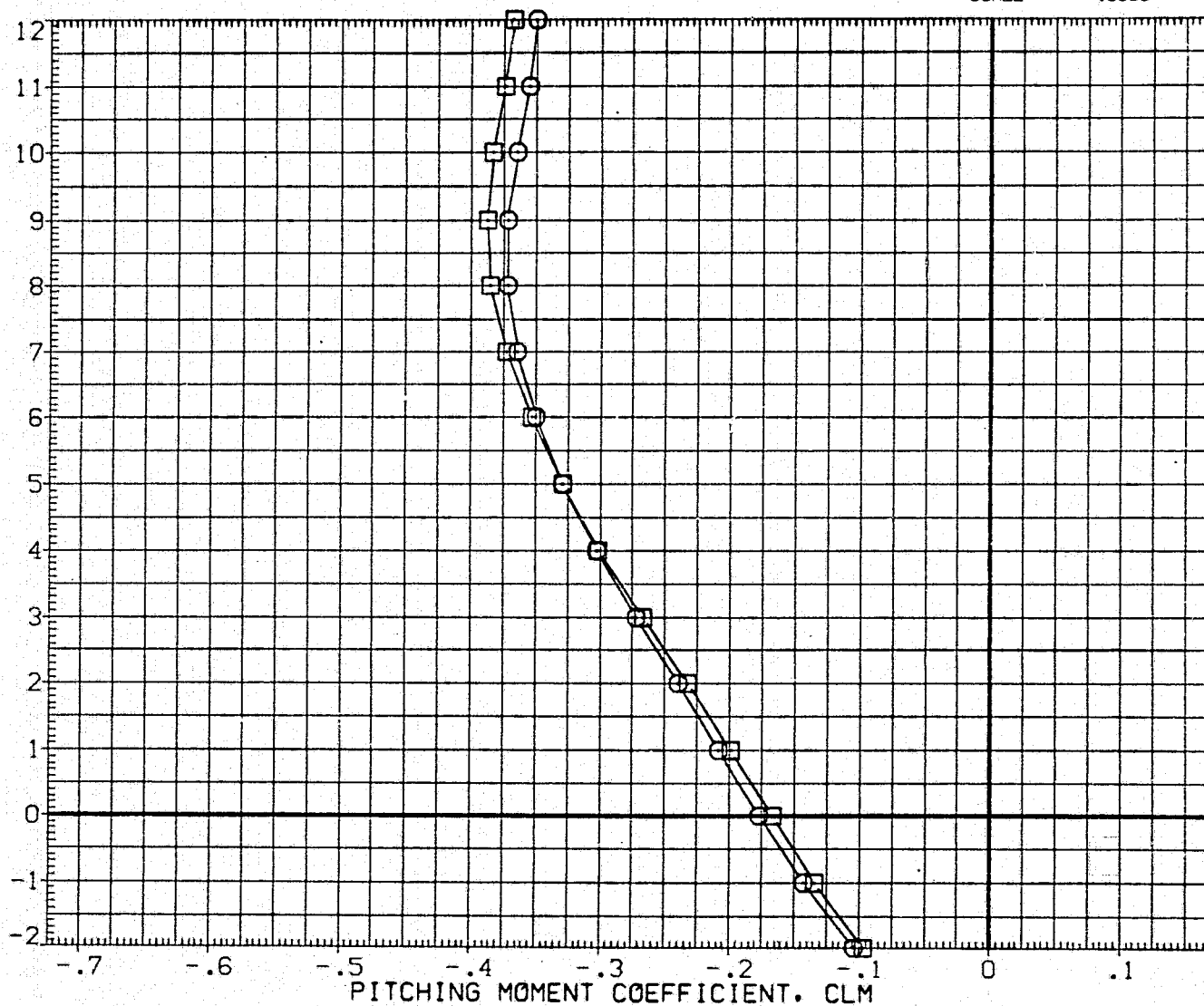


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO58)  $\square$  BTWT-1431CA5 K1 F20 H15.1A V9.1  
 (RGMO59)  $\square$  BTWT-1431CA5 K1 F20 H15.6 V9.1

STAB S5-6  
 1.000 .000  
 1.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

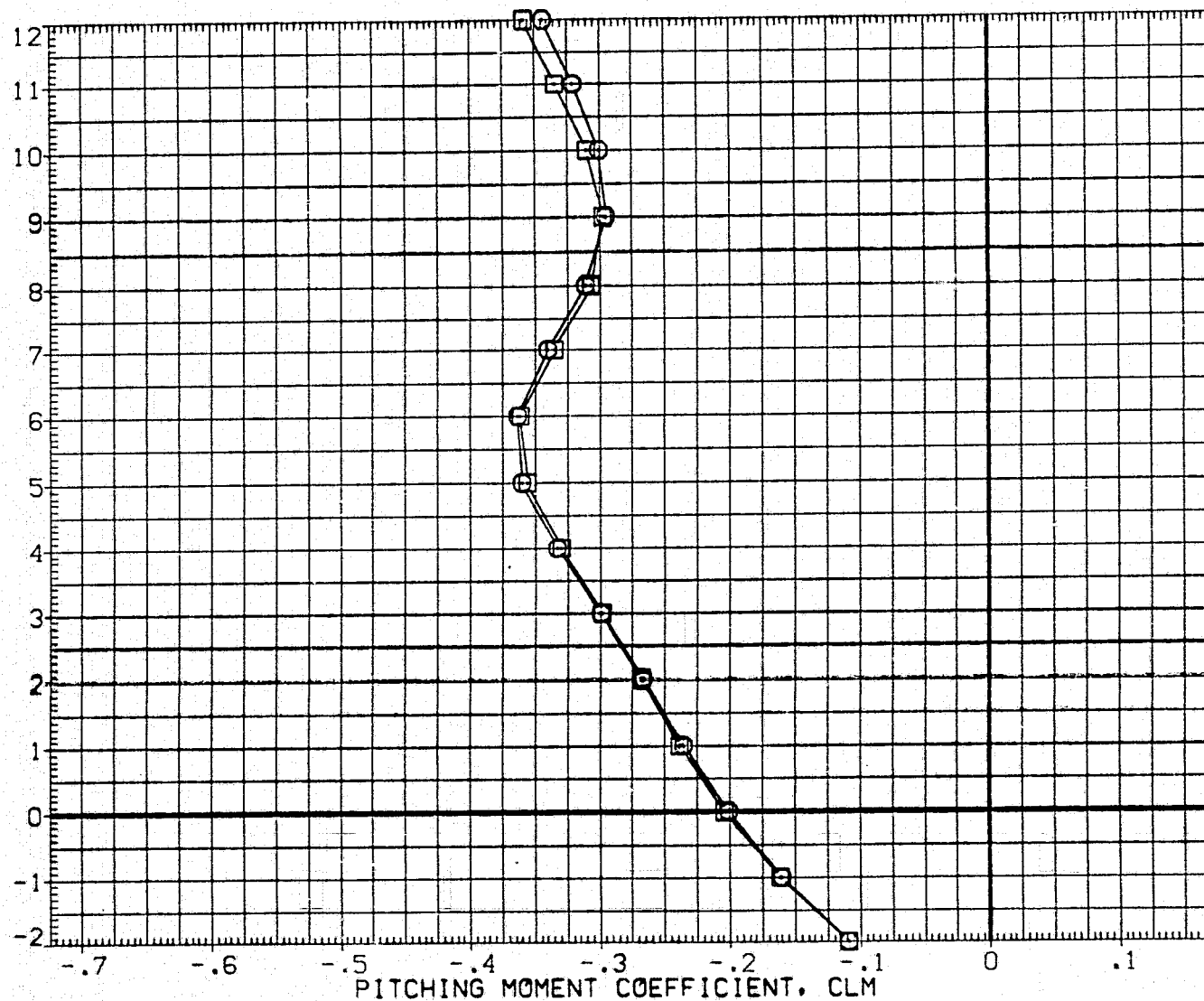


FIG.226 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(RGMO74)	□ CAS K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1)	1.000	9.700	.000
(RGMO71)	□ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	1.000	9.700	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

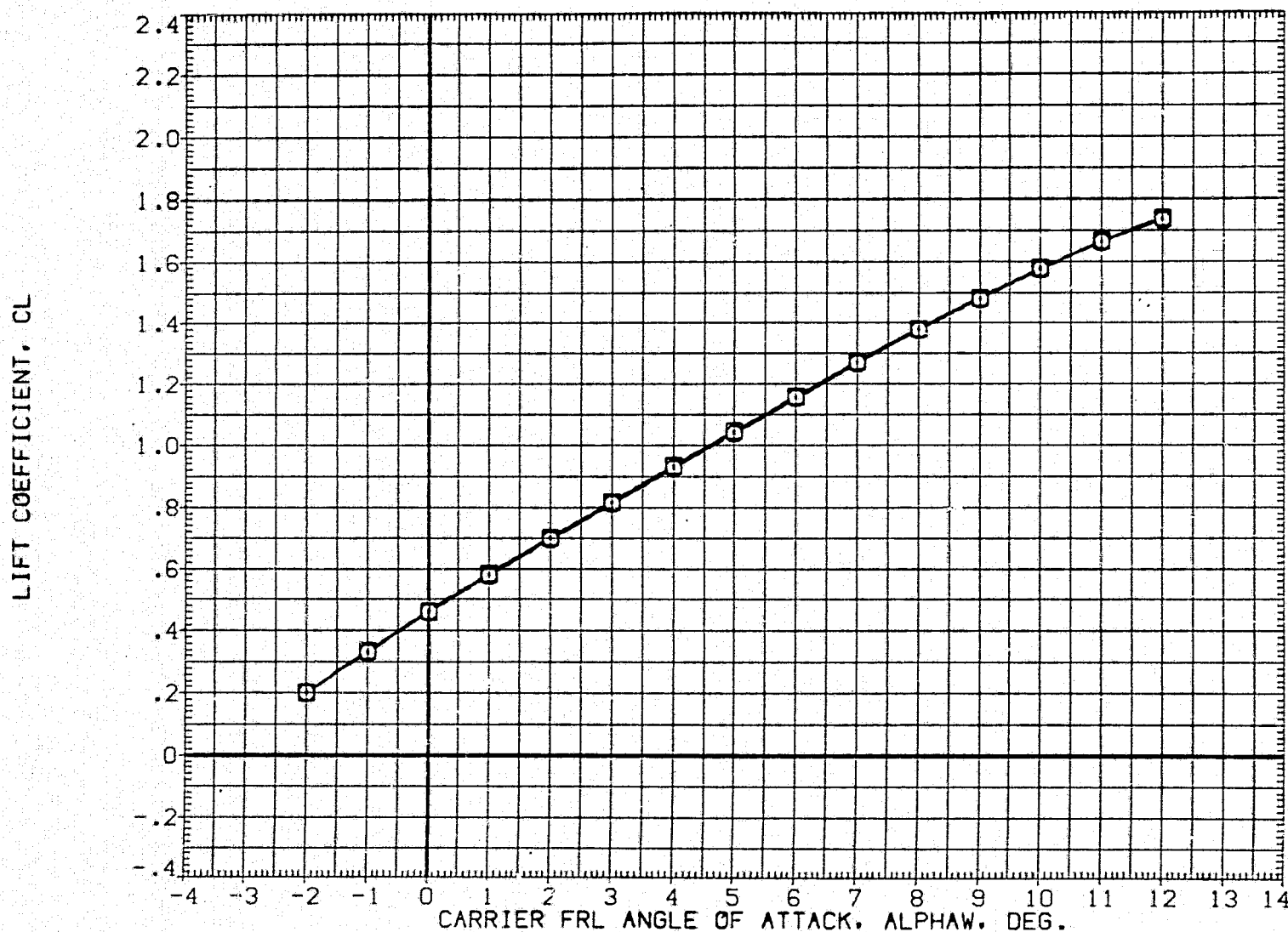


FIG. 227 747+ORB(10 DEG),EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(A)MACH = .50

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION		
(RGMO74)	○	CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1)	1.000	9.700	.000	SREF	5500.0000	50. FT.
(RGMO71)	□	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	9.700	.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

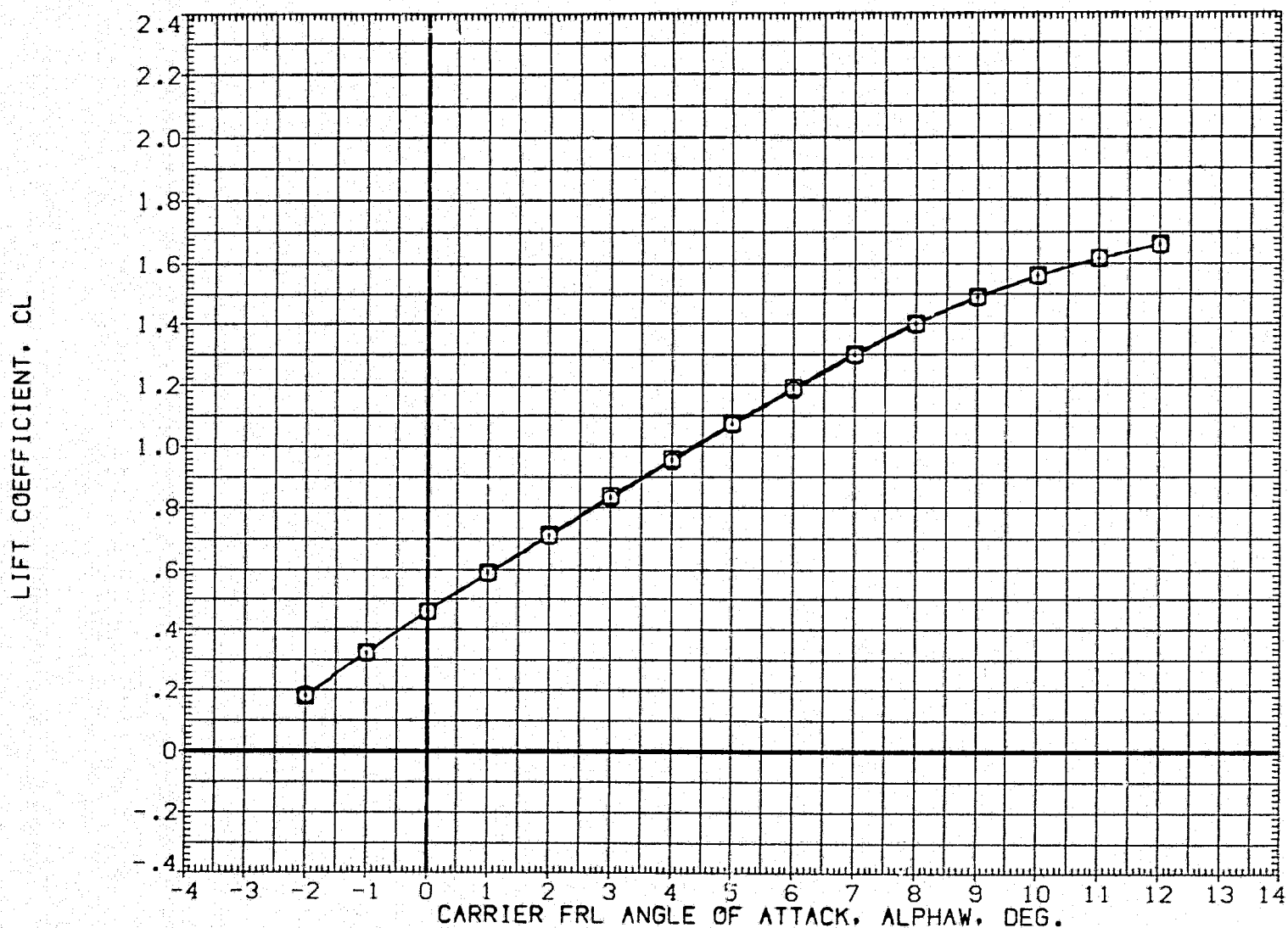


FIG. 227 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(B) MACH = .60



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM074) ☐ CAS K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )  
 (RGM071) ☐ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )

STAB 10RB SS-6  
 1.000 9.700 .000  
 1.000 9.700 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

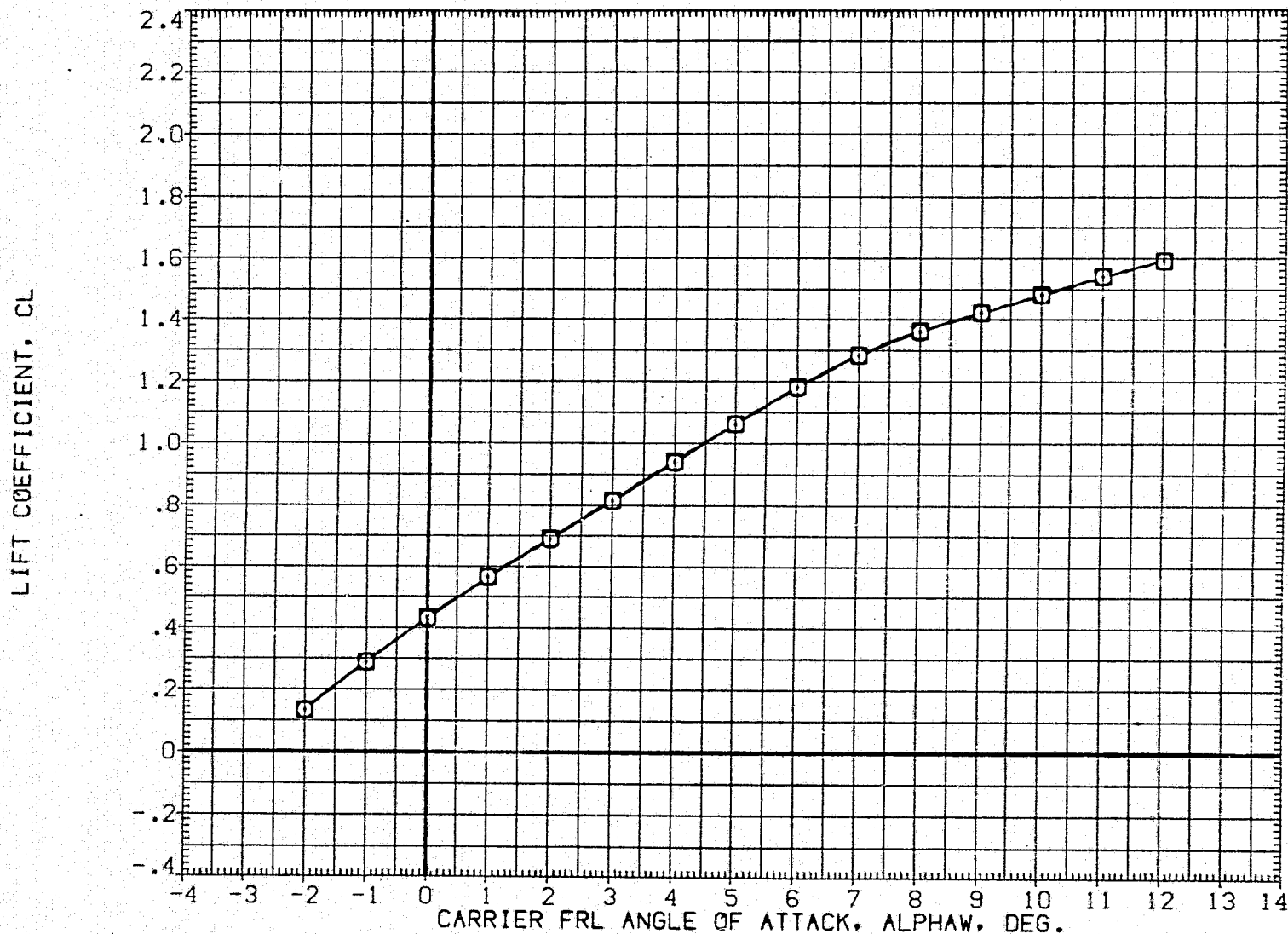


FIG. 227 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION	
(RGM074)	CAS K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )	1.000	9.700	.000	SREF	5500.0000 SQ. FT.
(RGM071)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	9.700	.000	LREF	327.8000 IN.
					BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

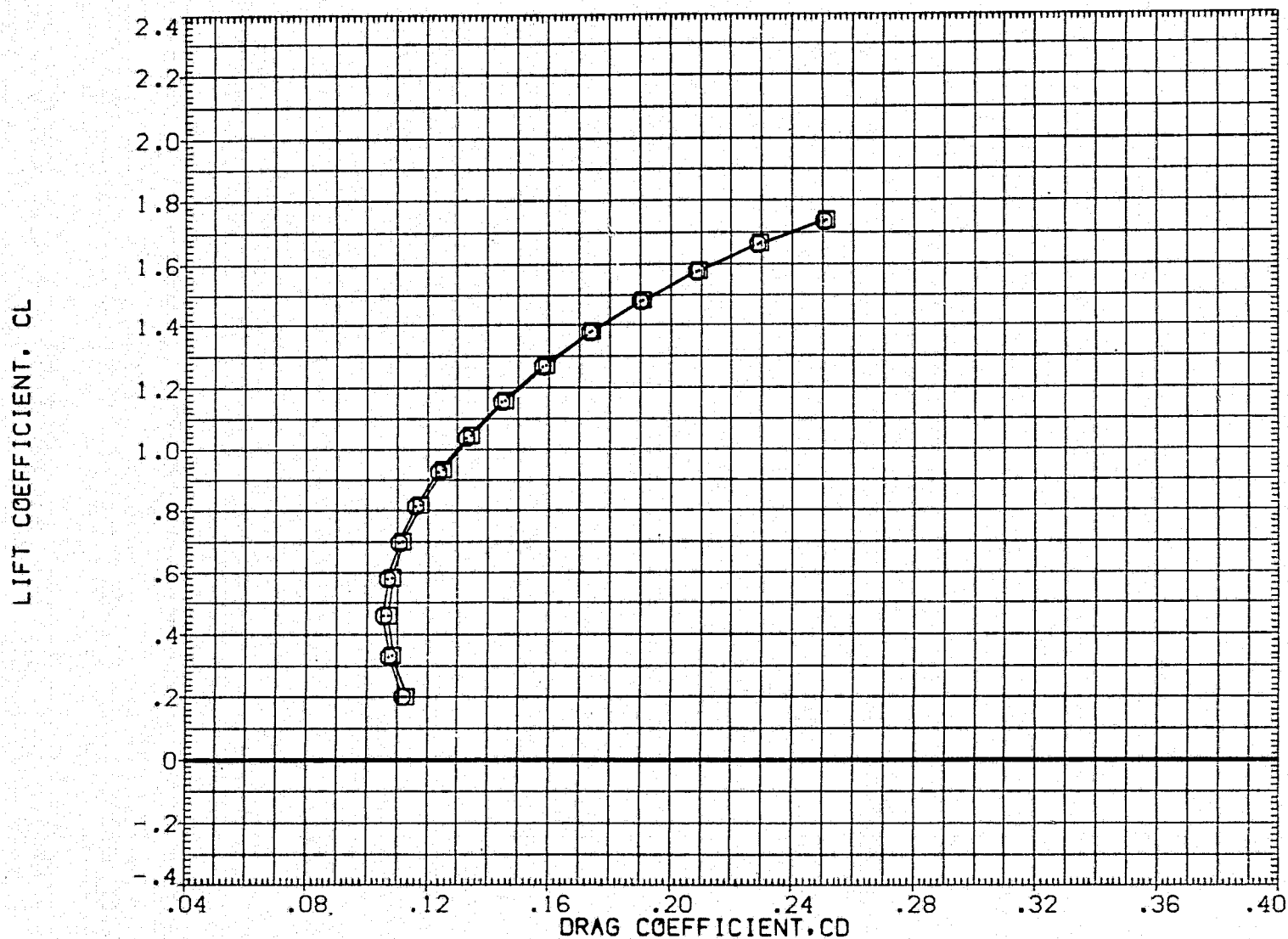


FIG. 227 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM074)  $\square$  CAS KI F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )  
 (RGM071)  $\square$  CAS KI F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )

STAB

10RB

S5-6

1.000 9.700 .000  
 1.000 9.700 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRF 1339.9100 IN. XC  
 YMRF .0000 IN. YC  
 ZMRF 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

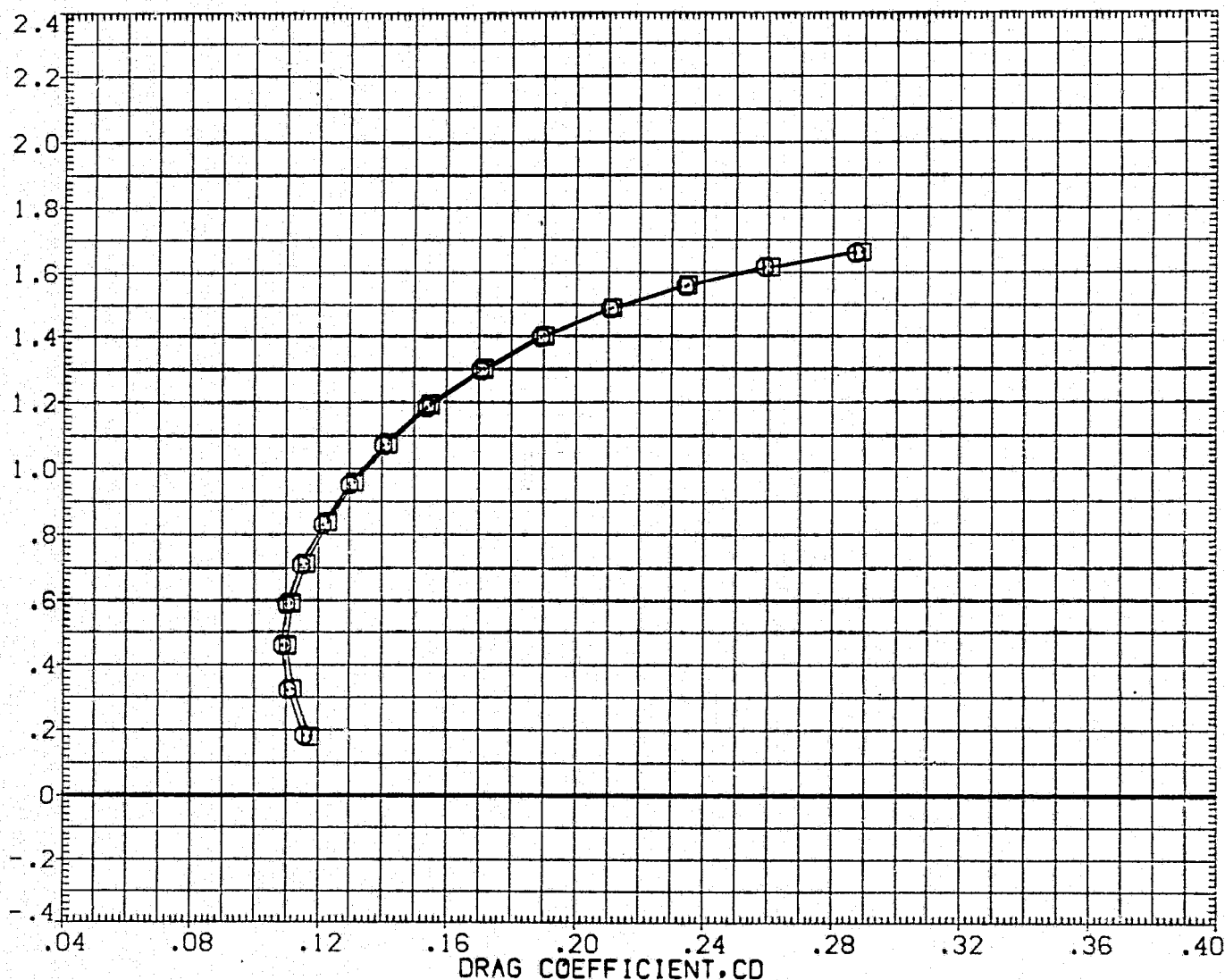




FIG. 227 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM074)  CA5 K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM071)  CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

STAB 10RB SS-6  
 1.000 9.700 .000  
 1.000 9.700 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

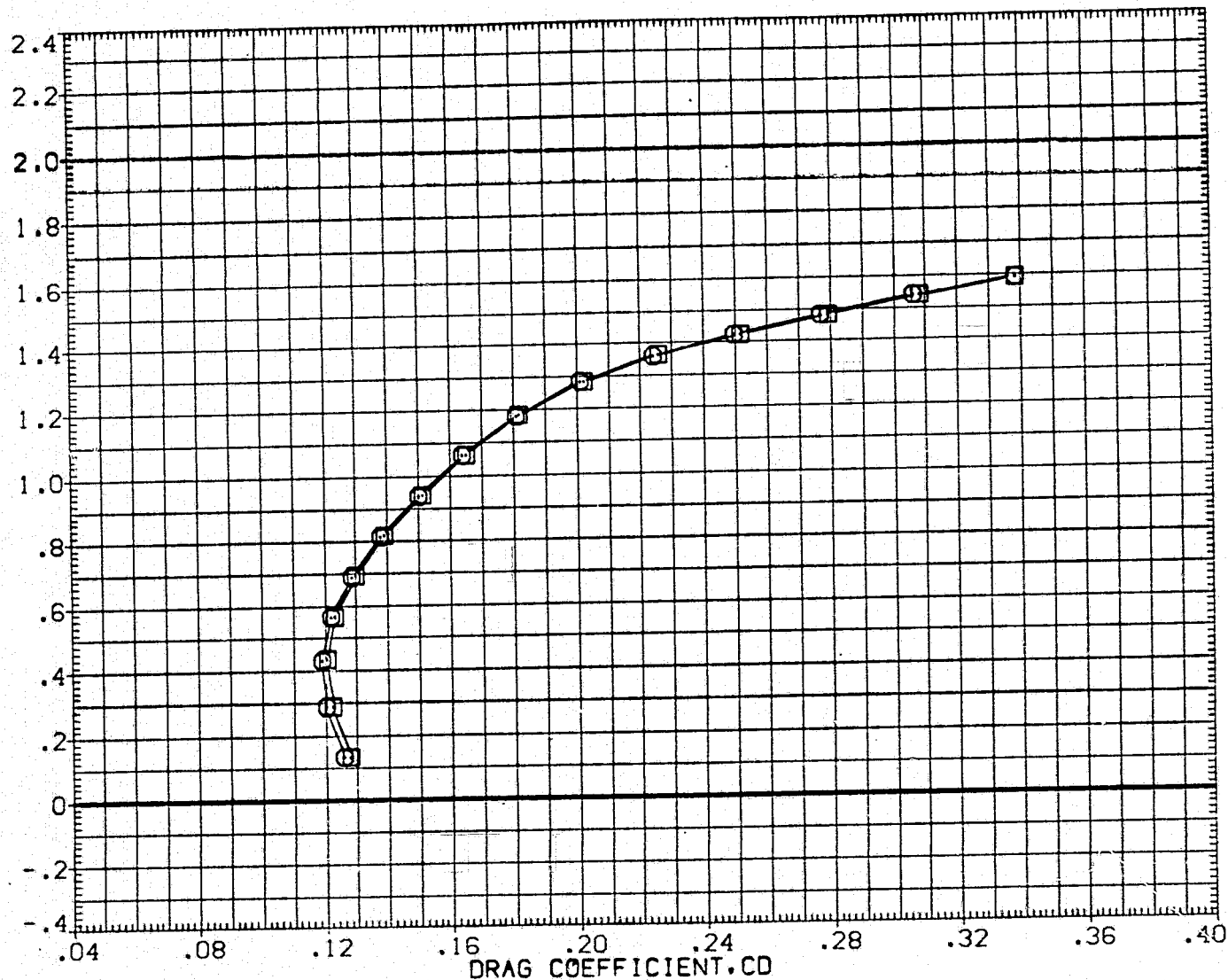


FIG. 227 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH  
 (C)MACH = .70

DATA SET SYMBOL      CONFIGURATION DESCRIPTION

(RGMD74)      CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGMD71)      CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

STAB      10RB      S5-6  
 1.000      9.700      .000  
 1.000      9.700      .000

REFERENCE INFORMATION

SREF      5500.0000      SQ.FT.  
 LREF      327.8000      IN.  
 BREF      2348.0000      IN.  
 XMRP      1339.9100      IN. XC  
 YMRP      .0000      IN. YC  
 ZMRP      190.7500      IN. ZC  
 SCALE      .0300

LIFT COEFFICIENT, CL

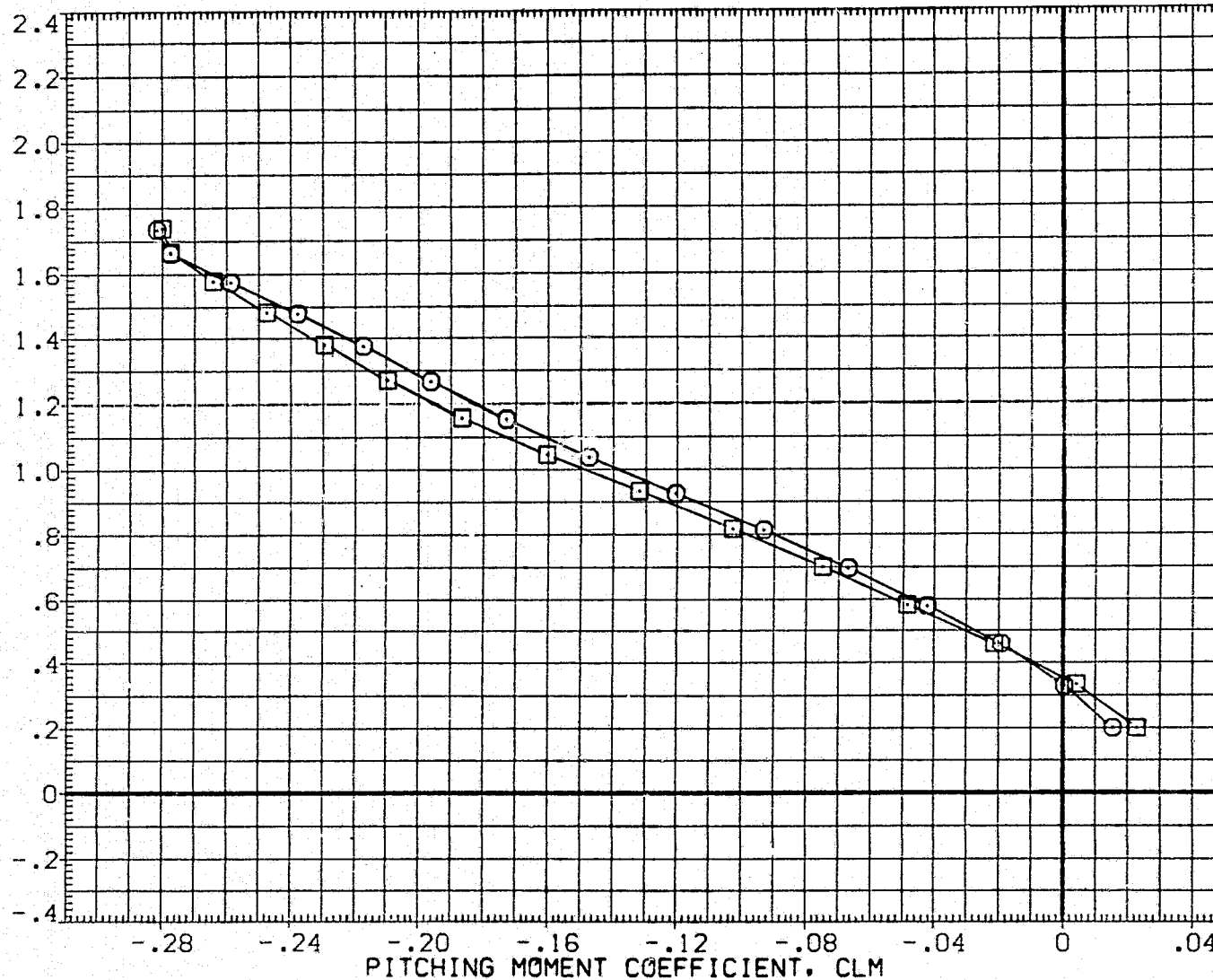


FIG. 227 747+ORB(10 DEG).EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION	
(RGM074)	○ CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	9.700	.000	SREF	5500.0000 SQ.FT.
(RGM071)	□ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	9.700	.000	LREF	327.8000 IN.
					BREF	2348.0000 IN.
					XMRF	1339.9100 IN. XC
					YMRF	.0000 IN. YC
					ZMRF	190.7500 IN. ZC
					SCALE	.0300

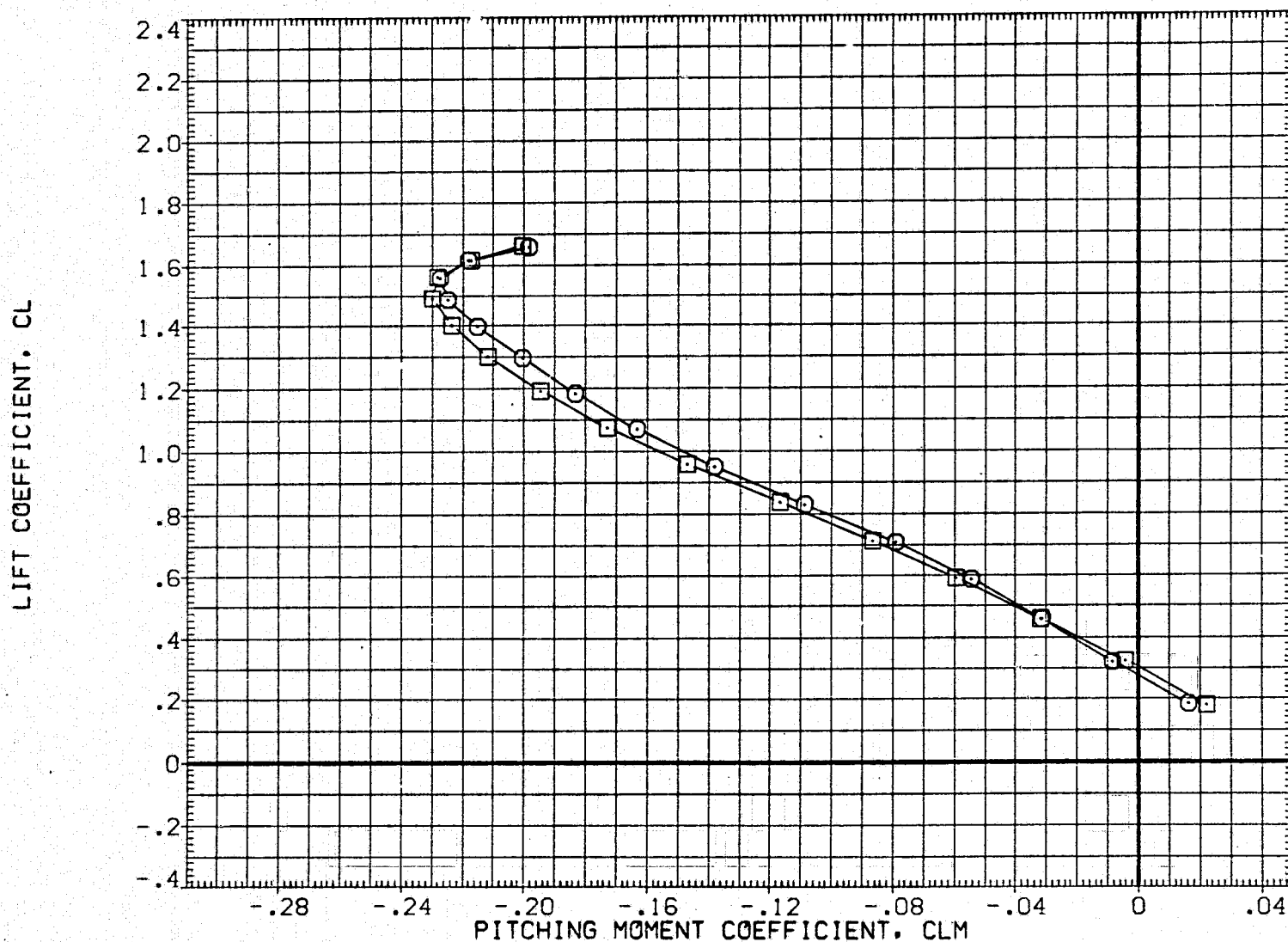


FIG. 227 747+ORB(10 DEG),EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH  
(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGMO74)  $\square$  CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGMO71)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

STAB

10RB

S5-6

1.000 9.700 .000  
 1.000 9.700 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRF 1339.9100 IN. XC  
 YMRF .0000 IN. YC  
 ZMRF 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

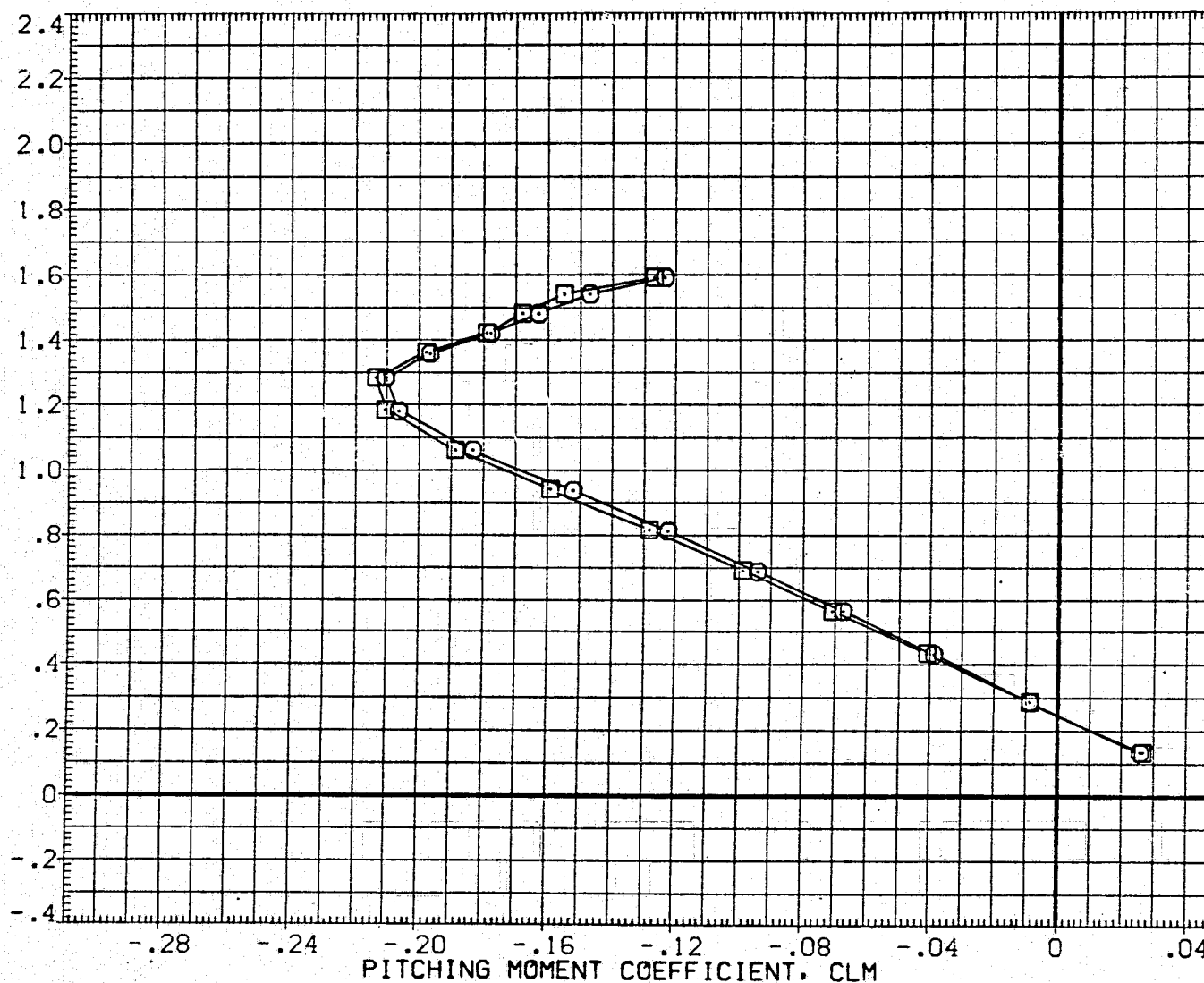


FIG. 227 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM074) ○	CAS K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )
(RGM071) □	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )

STAB	IORB	S5-6
1.000	9.700	.000
1.000	9.700	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA. DEG.

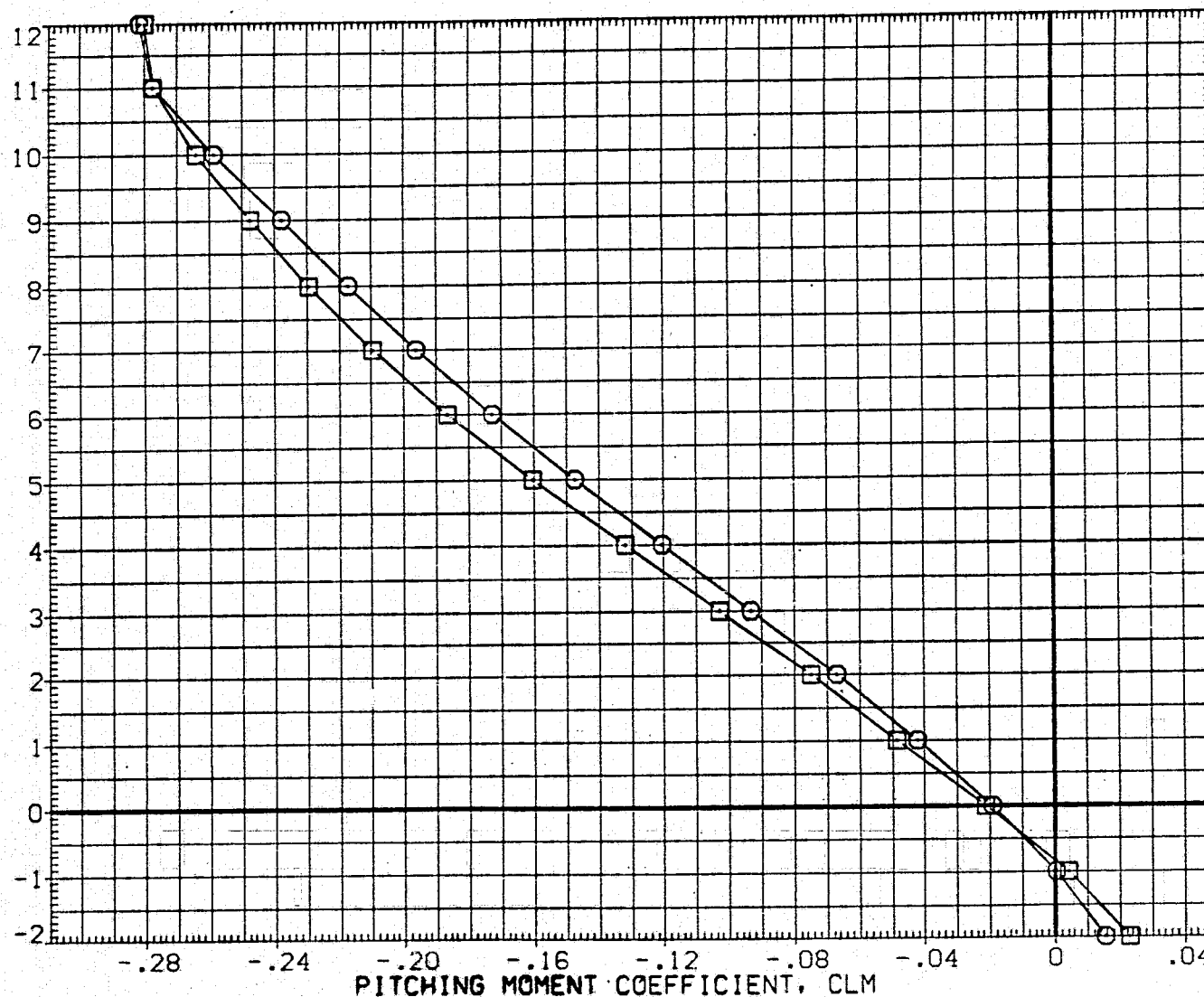


FIG. 227 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(A) MACH = .50



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM074)  $\square$  CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM071)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

STAB 1.000 9.700 .000  
 10RB 1.000 9.700 .000  
 S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

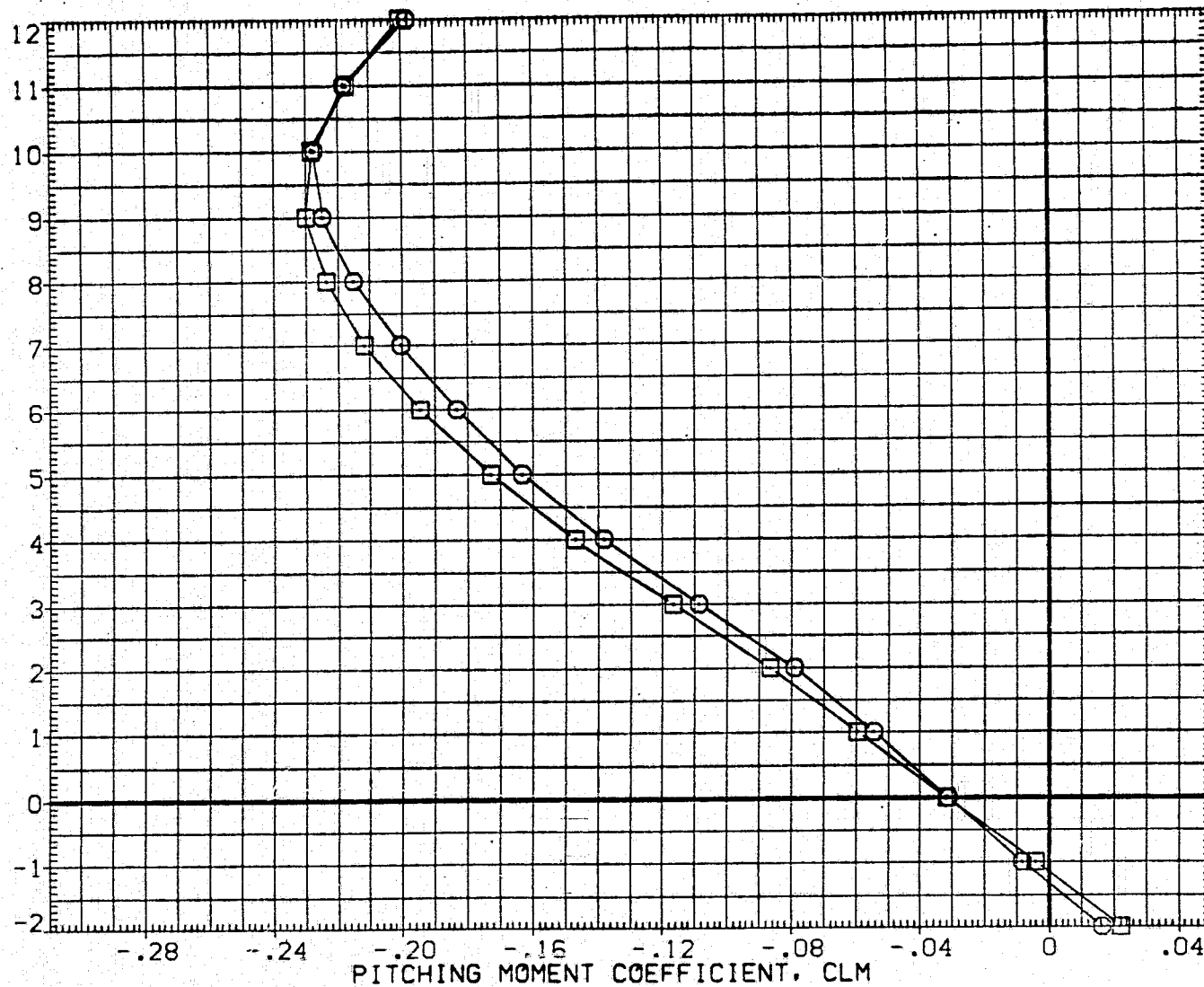


FIG. 227 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM074)  $\square$  CAS KI F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1 )  
 (RGM071)  $\square$  CAS KI F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )

STAB

10RB

S5-6

1.000  
1.0009.700  
9.700.000  
.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

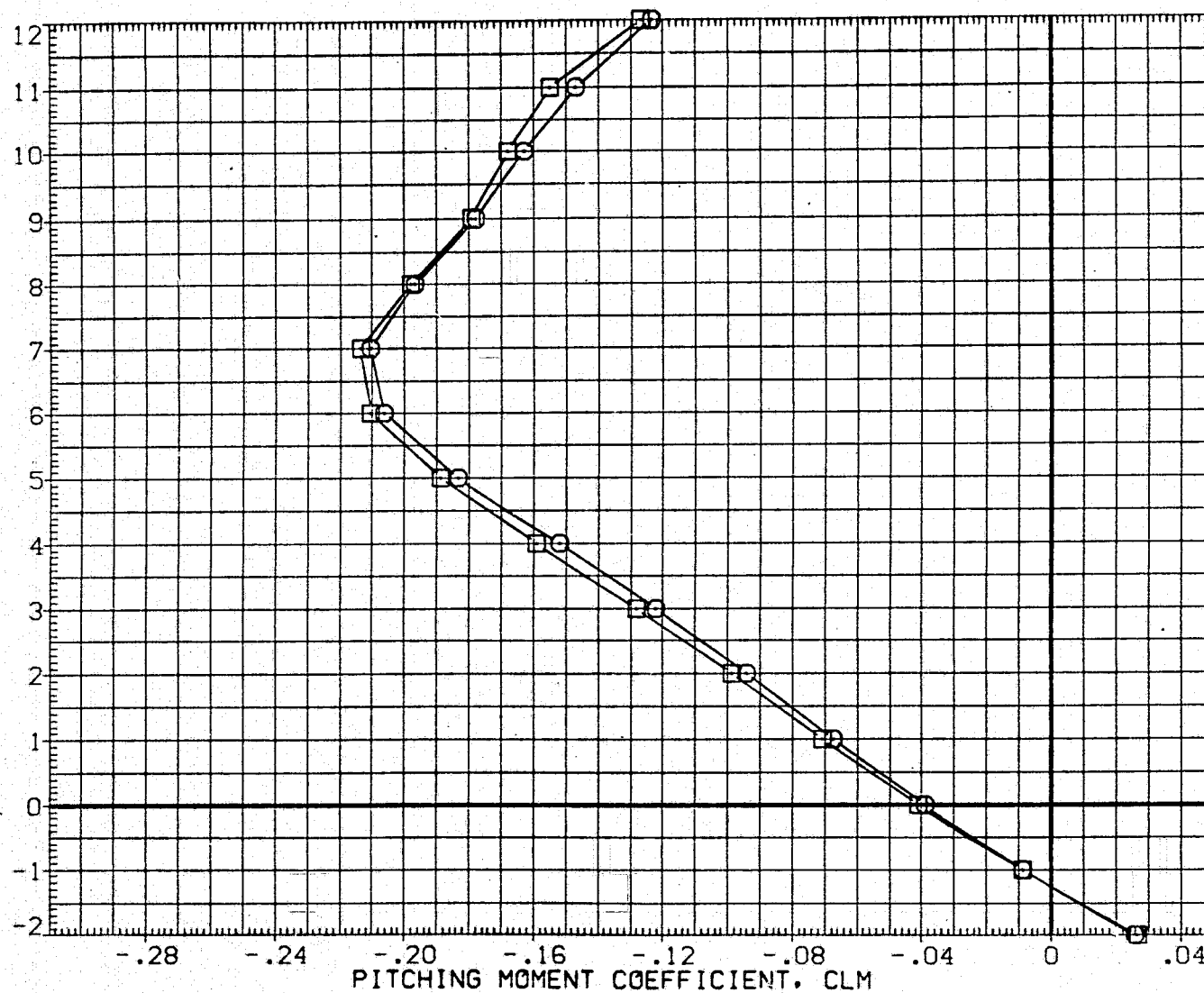


FIG. 227 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(C)MACH = .70

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DATA SET SYMBOL      CONFIGURATION DESCRIPTION

(RGM045)      DATA NOT AVAILABLE  
 (RGM052)      BTWT-1431CA5 KI FO H15.6 V9.1 AT38 AT39  
 (RGM053)      BTWT-1431CA5 KI FO H15.6 V9.1 AT38.1 AT39

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
1.000	.000	45.000	20.000	SREF	5500.0000	SQ.FT.
1.000	.000	45.000	20.000	LREF	327.8000	IN.
1.000	.000	45.000	20.000	BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

LIFT COEFFICIENT, CL

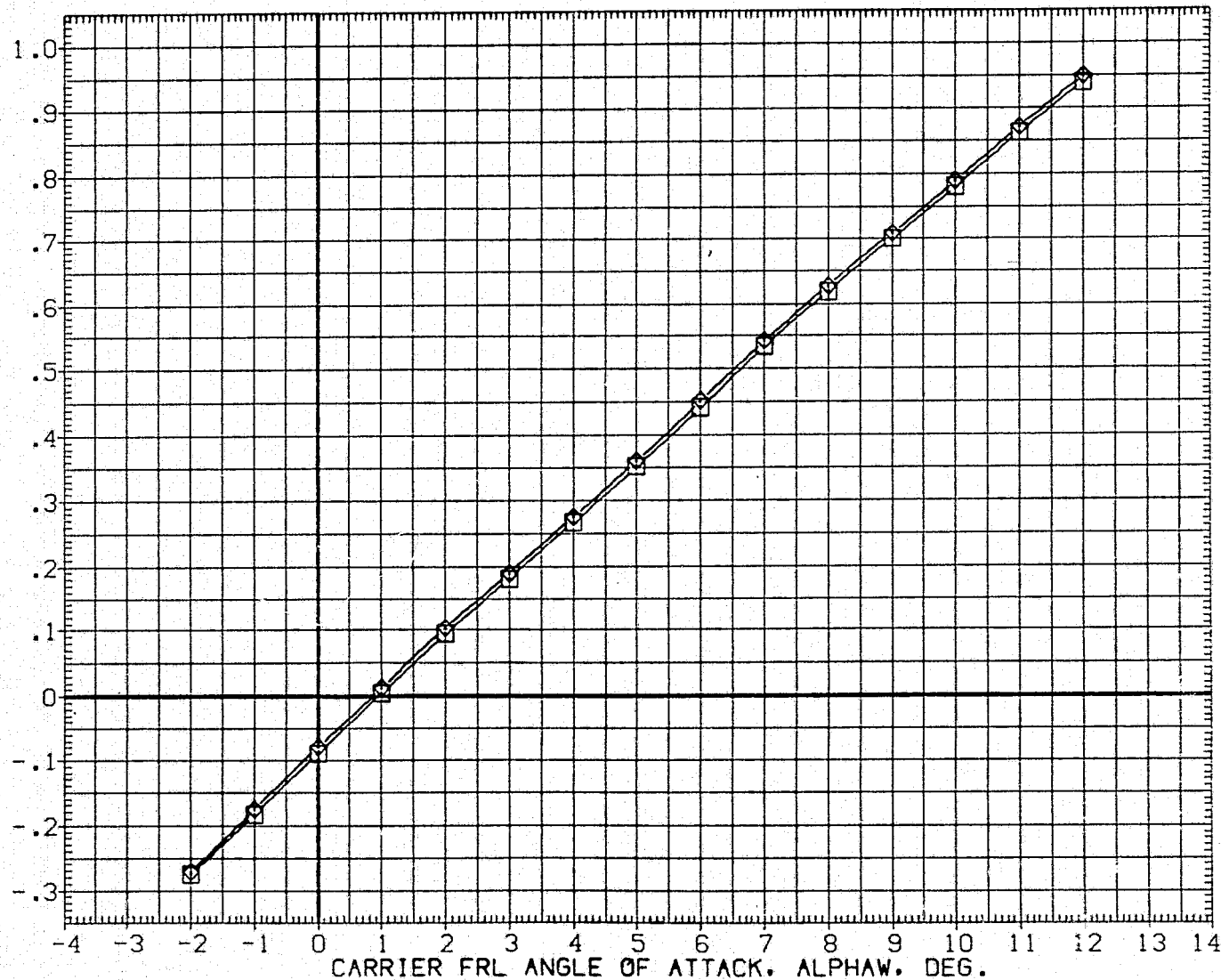


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(RGM045)	BTWT-1431CAS KI FO H15.6 V9.1	1.000	.000	45.000	20.000	SREF	5500.0000	SQ.FT.
(RGM052)	BTWT-1431CAS KI FO H15.6 V9.1 AT38 AT39	1.000	.000	45.000	20.000	LREF	327.8000	IN.
(RGM053)	BTWT-1431CAS KI FO H15.6 V9.1 AT38.1 AT39	1.000	.000	45.000	20.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

LIFT COEFFICIENT, CL

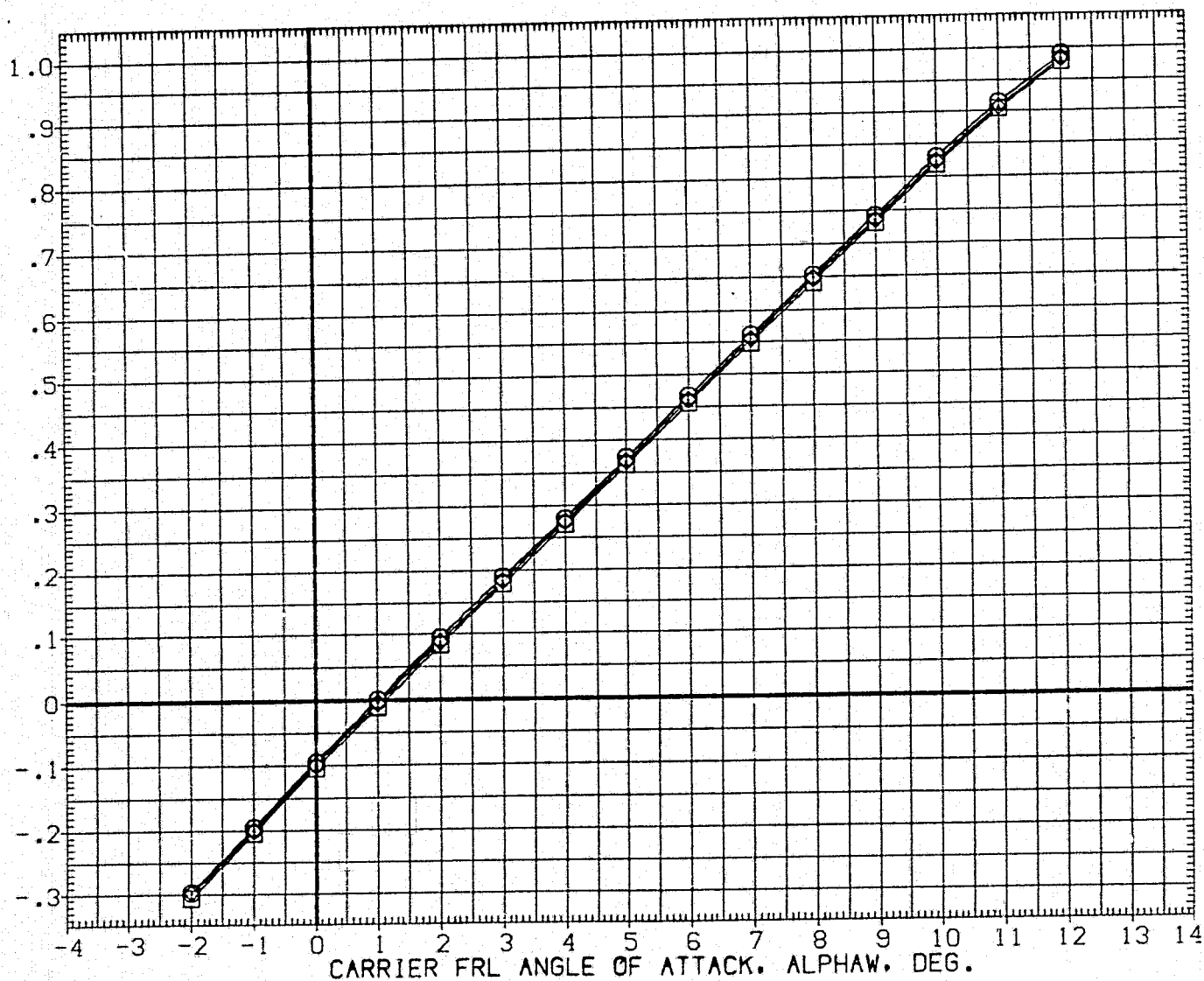


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGMO45) ○ BTWT-1431CAS KI FO H15.6 V9.1  
 (RGMO52) □ BTWT-1431CAS KI FO H15.6 V9.1 AT38 AT39  
 (RGMO53) ◇ BTWT-1431CAS KI FO H15.6 V9.1 AT38.1 AT39

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
1.000	.000	45.000	20.000	SREF	5500.0000	SQ.FT.
1.000	.000	45.000	20.000	LREF	327.8000	IN.
1.000	.000	45.000	20.000	BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

LIFT COEFFICIENT, CL

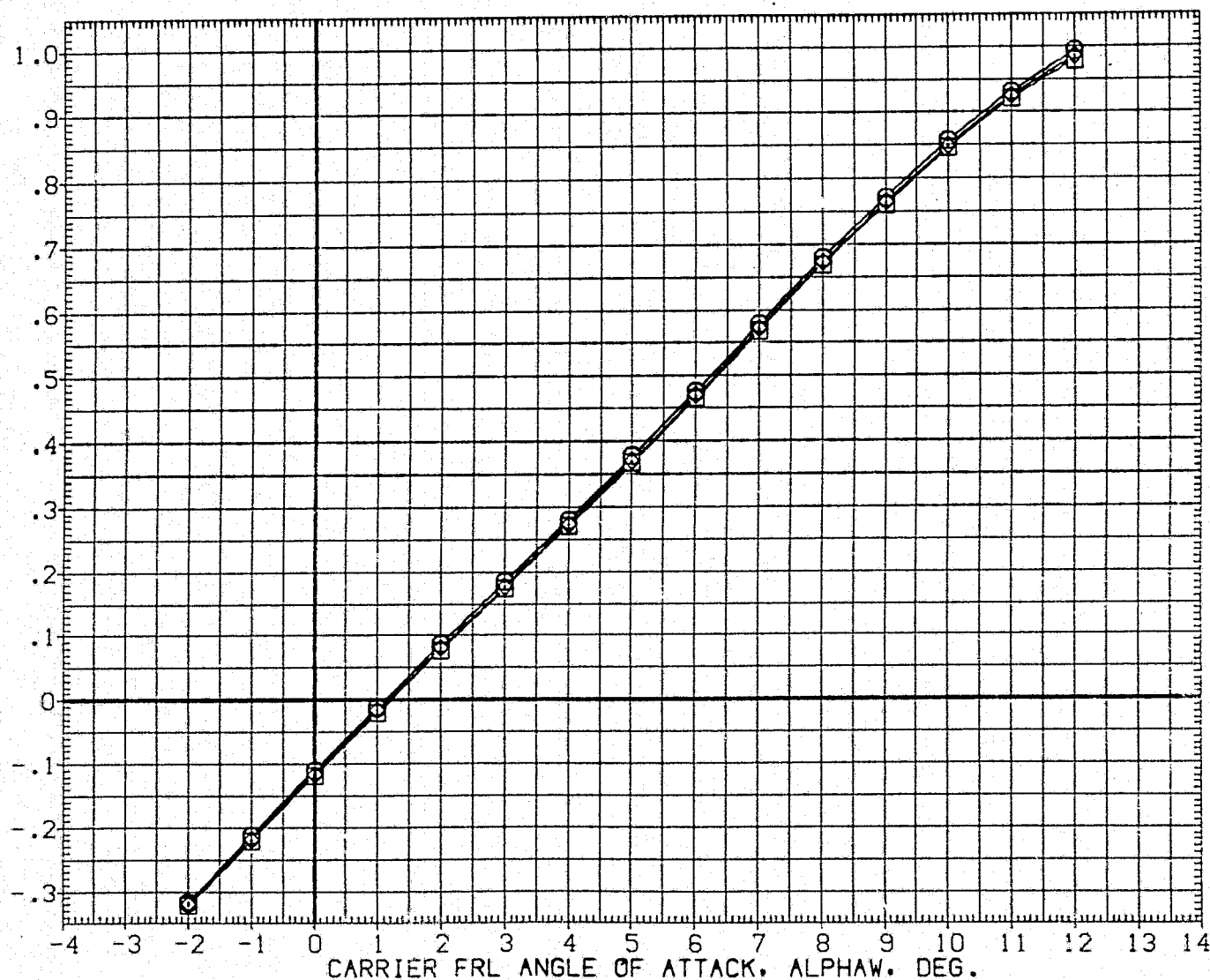


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM045)	DATA NOT AVAILABLE
(RGM052)	BTWT-1431CAS KI FO HIS.6 V9.1 AT38 AT39
(RGM053)	BTWT-1431CAS KI FO HIS.6 V9.1 AT38.1 AT39

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
1.000	.000	45.000	20.000	SREF	5500.0000 SQ.FT.
1.000	.000	45.000	20.000	LREF	327.8000 IN.
1.000	.000	45.000	20.000	BREF	2348.0000 IN.
				XMRP	1339.9100 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

LIFT COEFFICIENT, CL

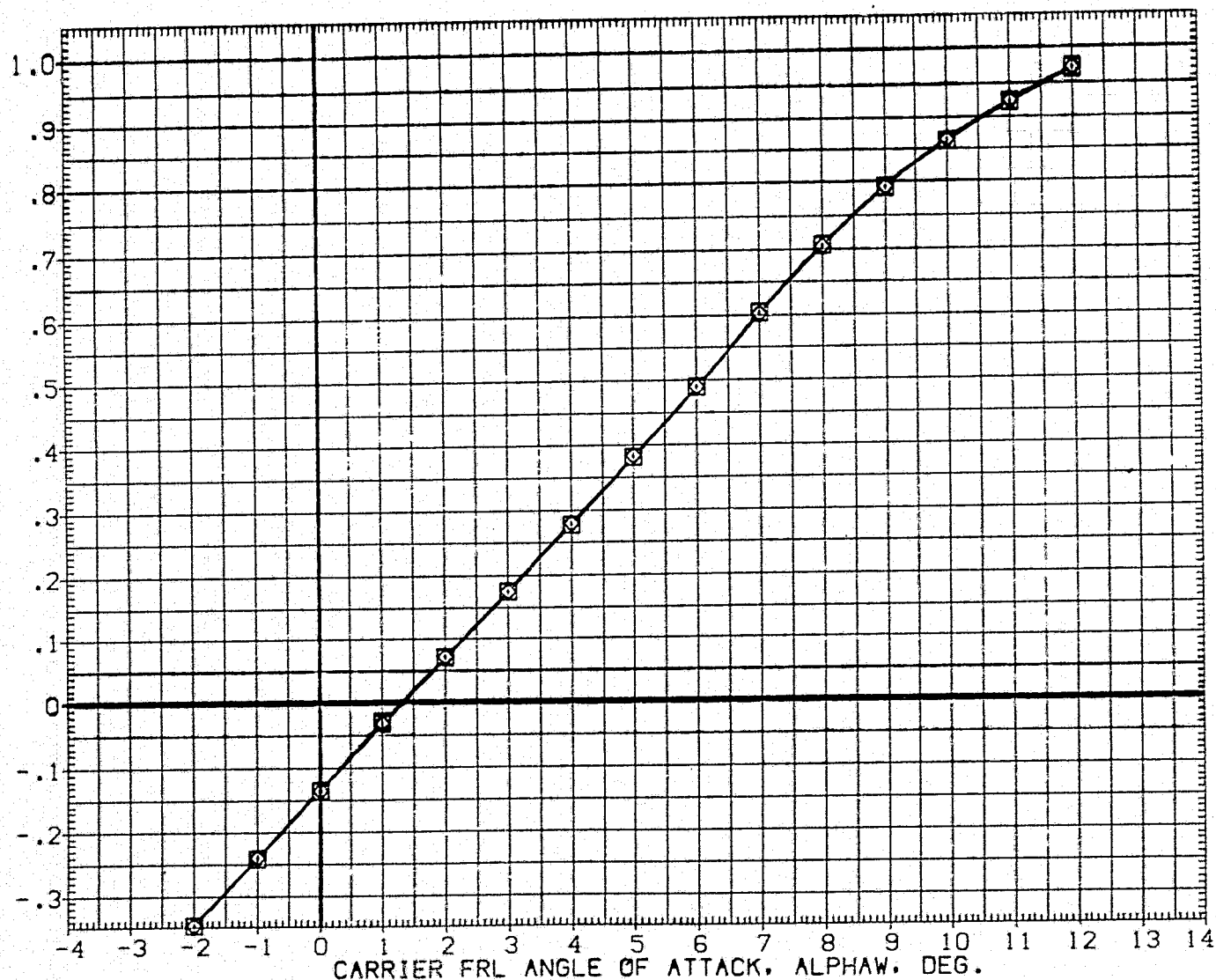


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM045) DATA NOT AVAILABLE  
 (RGM052) BTWT-1431CA5 KI FO H15.6 V9.1 AT38 AT39  
 (RGM053) BTWT-1431CA5 KI FO H15.6 V9.1 AT38.1 AT39

STAB	S1-2	S3-4	S5-6
1.000	.000	45.000	20.000
1.000	.000	45.000	20.000
1.000	.000	45.000	20.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2349.0000	IN.
XM RP	1339.9100	IN. XC
YM RP	.0000	IN. YC
ZM RP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

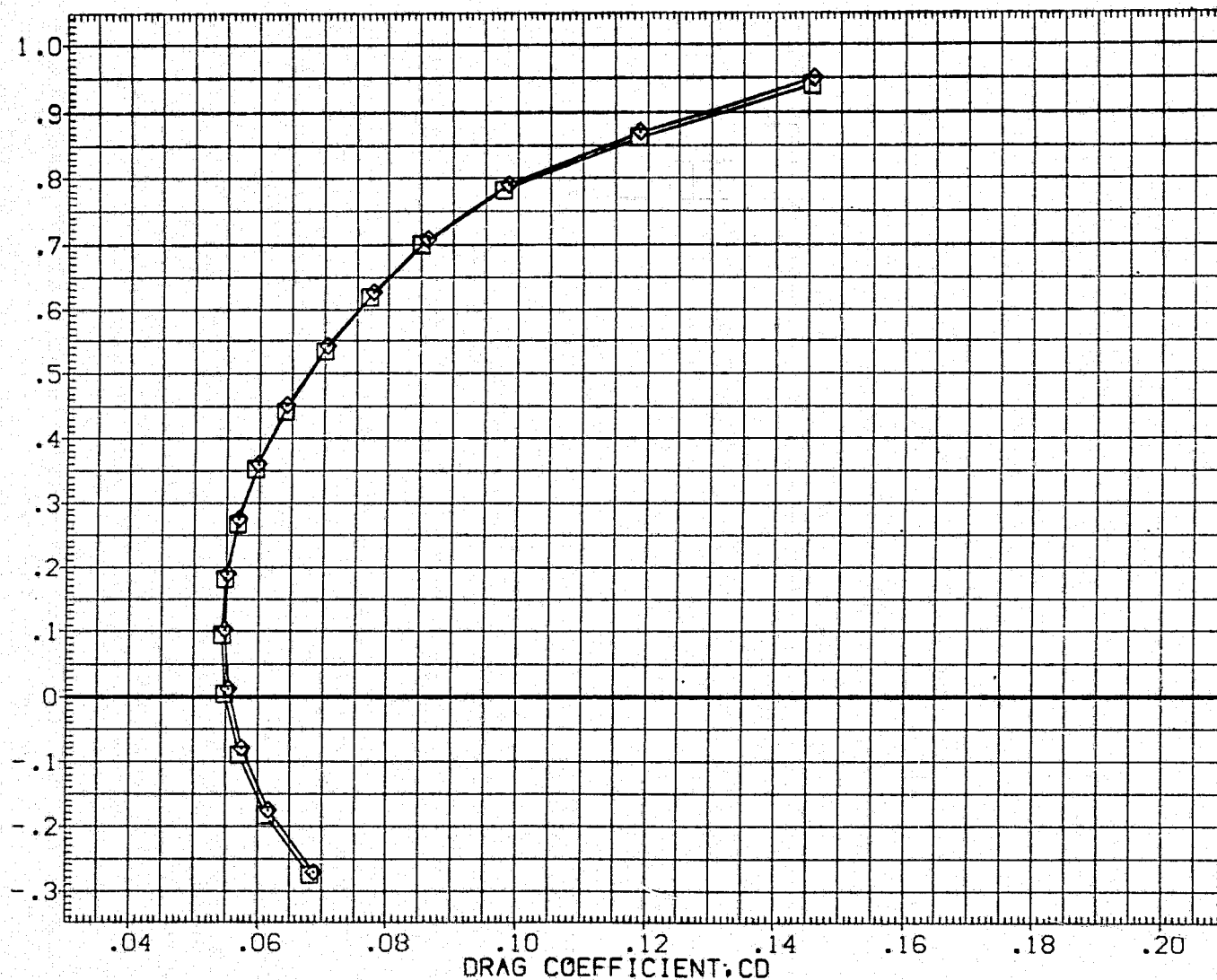


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(A) MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMD45)	BTWT-1431CAS KI FO H15.6 V9.1
(RGMD52)	BTWT-1431CAS KI FO H15.6 V9.1 AT39 AT39
(RGMD53)	BTWT-1431CAS KI FO H15.6 V9.1 AT38.1 AT39

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
1.000	.000	45.000	20.000	SREF	5500.0000 SQ.FT.
1.000	.000	45.000	20.000	LREF	327.8000 IN.
1.000	.000	45.000	20.000	BREF	2348.0000 IN.
				XMRP	1339.9100 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

LIFT COEFFICIENT, CL

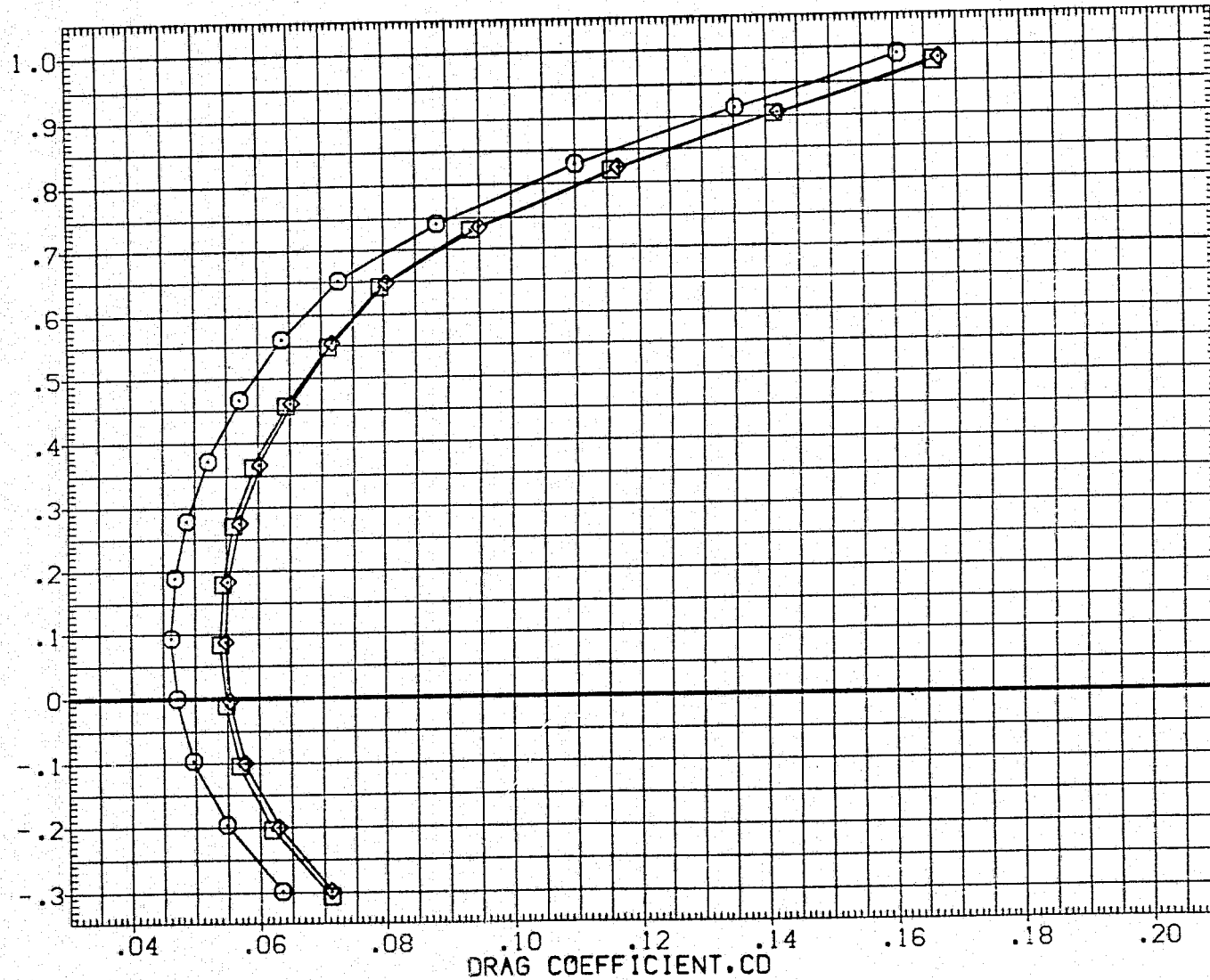


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP  
(B)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM045)	BTWT-1431CA5 KI FO H15.6 V9.1
(RGM052)	BTWT-1431CA5 KI FO H15.6 V9.1 AT38 AT39
(RGM053)	BTWT-1431CA5 KI FO H15.6 V9.1 AT38.1 AT39

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
1.000	.000	45.000	20.000	SREF	5500.0000	SQ.FT.
1.000	.000	45.000	20.000	LREF	327.8000	IN.
1.000	.000	45.000	20.000	BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

LIFT COEFFICIENT, CL

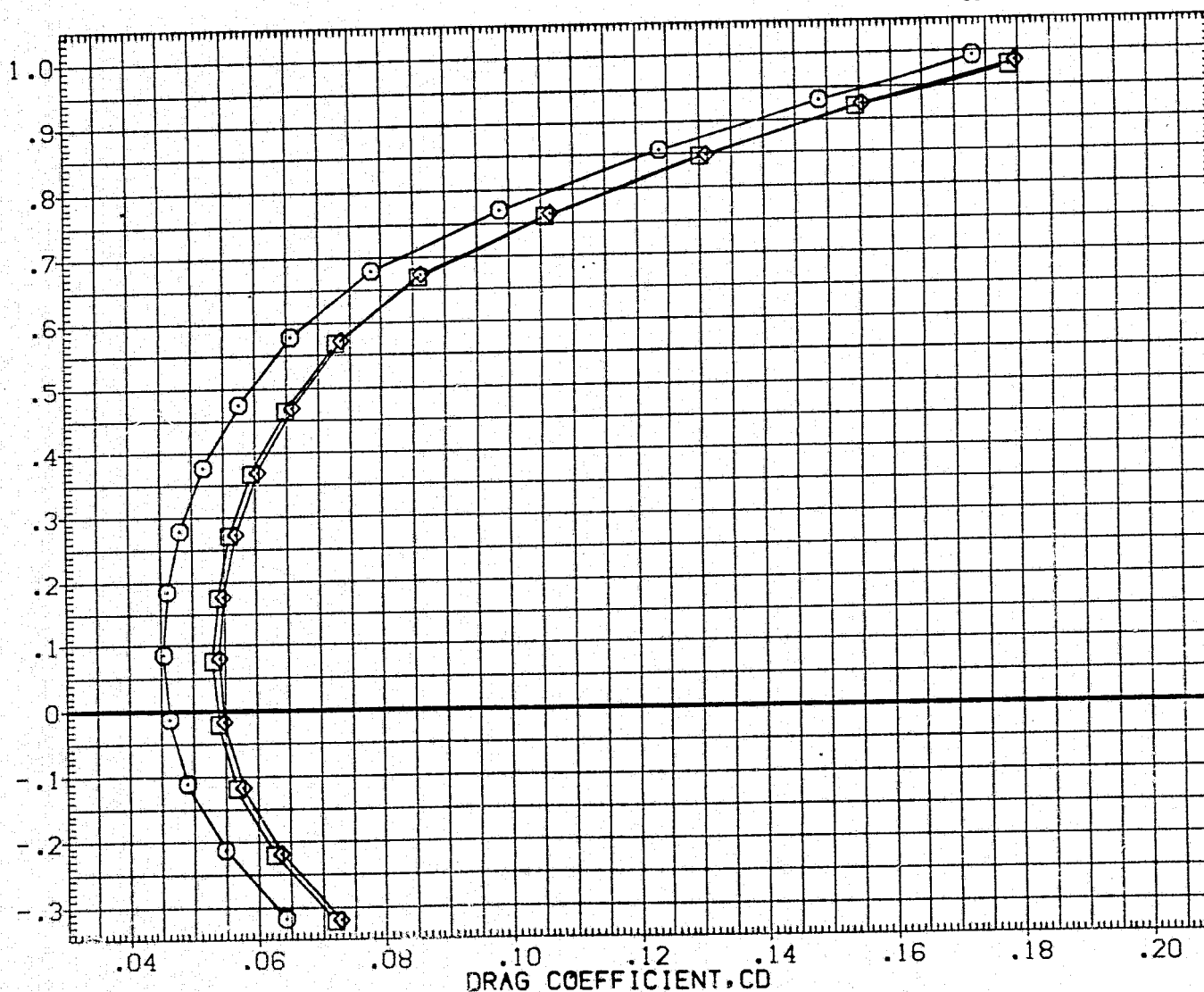


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM045)	DATA NOT AVAILABLE
(RGM052)	BTWT-1431CAS K1 FO H15.6 V9.1 AT38 AT39
(RGM053)	BTWT-1431CAS K1 FO H15.6 V9.1 AT38.1 AT39

STAB	Si-2	S3-4	S5-6	REFERENCE INFORMATION	
1.000	.000	45.000	20.000	SREF	5500.0000 SQ.FT.
1.000	.000	45.000	20.000	LREF	327.8000 IN.
1.000	.000	45.000	20.000	BREF	2348.0000 IN.
				XMRP	1339.9100 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

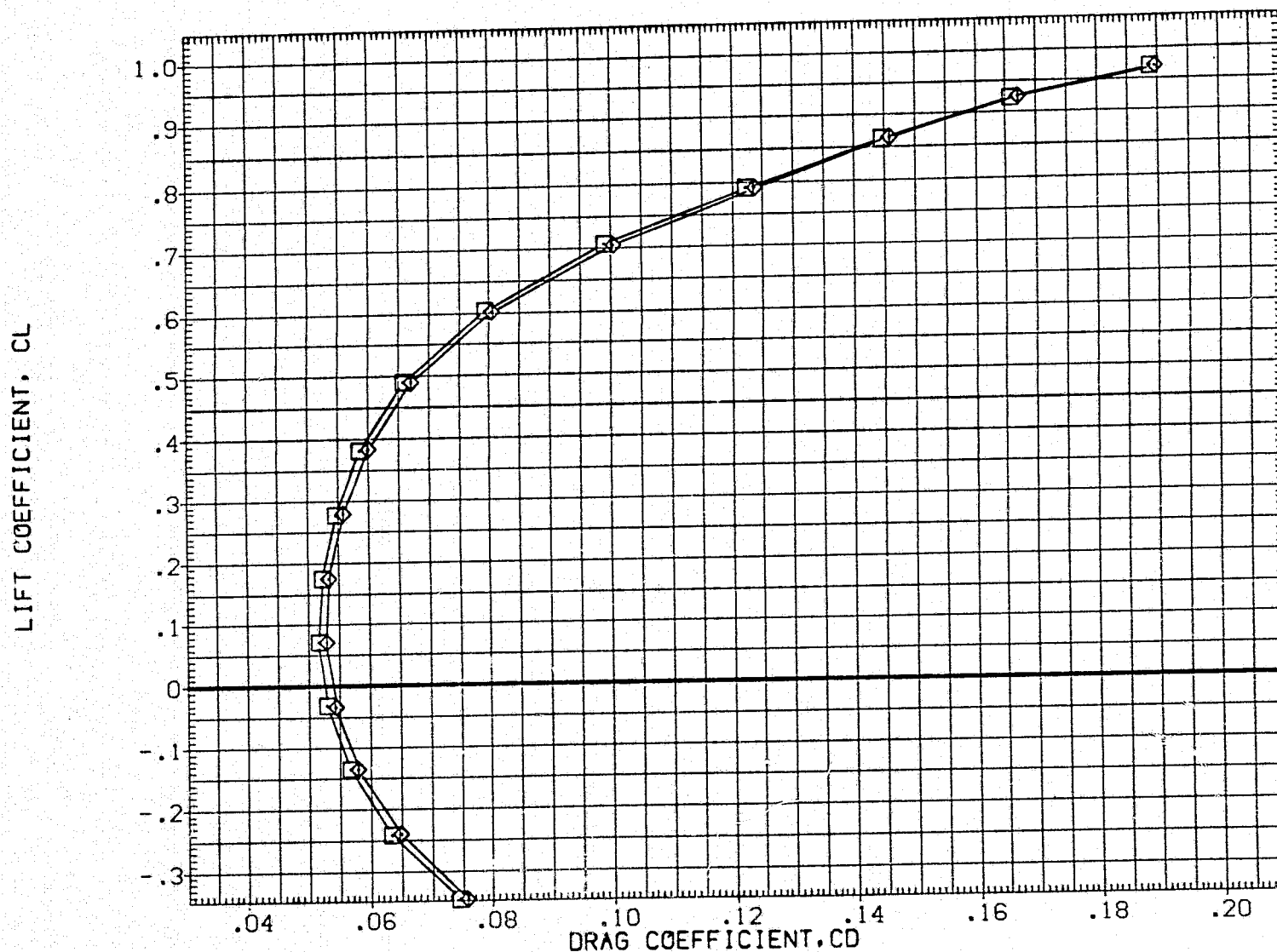


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP  
(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGMO45) DATA NOT AVAILABLE  
 (RGMO52) BTWT-1431CA5 KI FO H15.6 V9.1 AT38 AT39  
 (RGMO53) BTWT-1431CA5 KI FO H15.6 V9.1 AT38.1 AT39

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION	
1.000	.000	45.000	20.000	SREF 5500.0000	SQ.FT.
1.000	.000	45.000	20.000	LREF 327.8000	IN.
1.000	.000	45.000	20.000	BREF 2348.0000	IN.
				XMRP 1339.9100	IN. XC
				YMRP .0000	IN. YC
				ZMRP 190.7500	IN. ZC
				SCALE .0300	

LIFT COEFFICIENT, CL



FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGMD45) ○ BTWT-1431CA5 K1 FO H15.6 V9.1  
 (RGMD52) □ BTWT-1431CA5 K1 FO H15.6 V9.1 AT38 AT39  
 (RGMD53) ◇ BTWT-1431CA5 K1 FO H15.6 V9.1 AT38.1 AT39

STAG SI-2 S3-4 S5-6  
 1.000 .000 45.000 20.000  
 1.000 .000 45.000 20.000  
 1.000 .000 45.000 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 X1:SP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

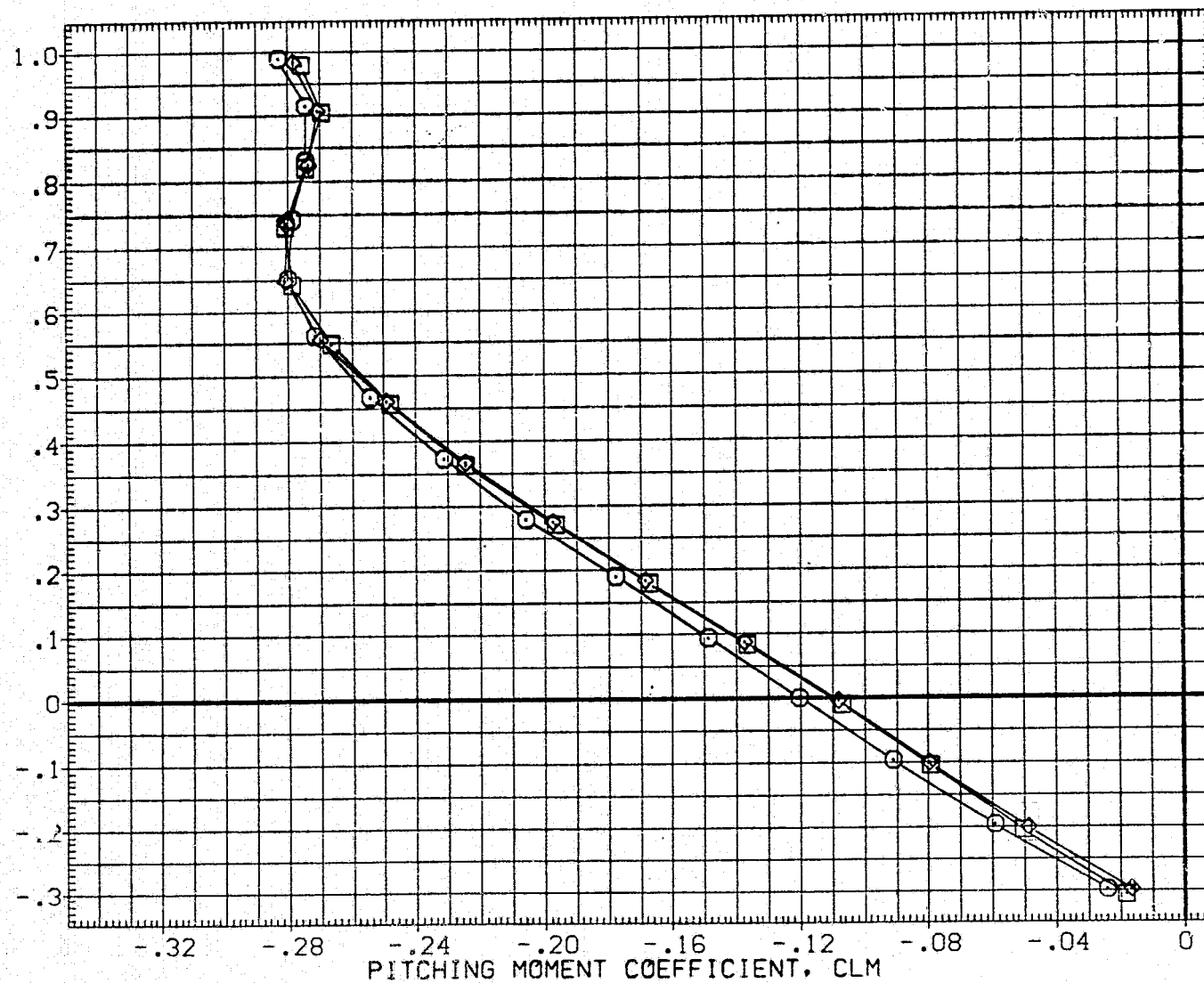


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM045) BTWT-1431CA5 K1 FO H15.6 V9.1  
 (RGM052) BTWT-1431CA5 K1 FO H15.6 V9.1 AT38 AT39  
 (RGM053) BTWT-1431CA5 K1 FO H15.6 V9.1 AT38.1 AT39

STAB S1-2 S3-4 S5-6  
 1.000 .000 45.000 20.000  
 1.000 .000 45.000 20.000  
 1.000 .000 45.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

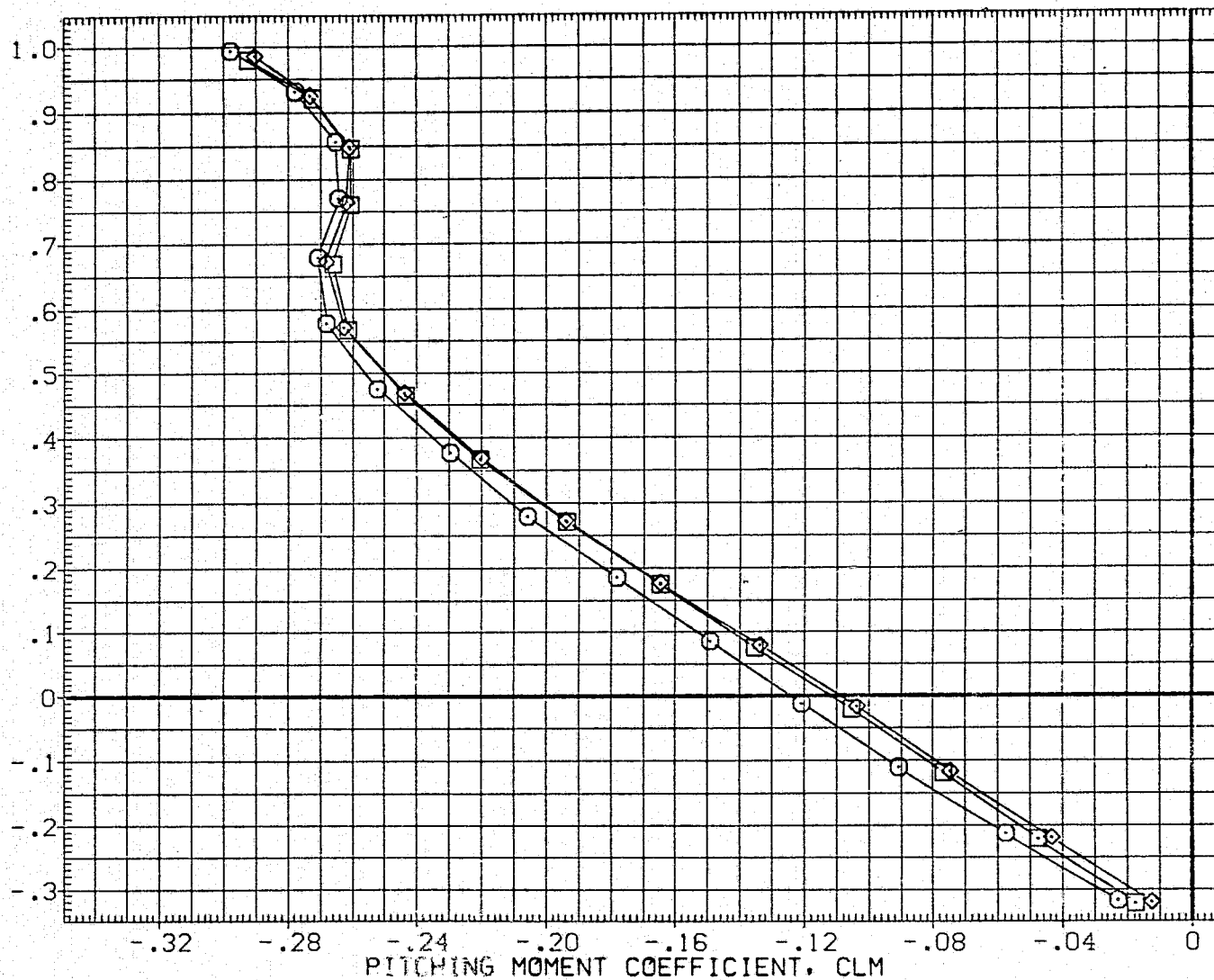


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMD45)	DATA NOT AVAILABLE
(RGMD52)	BTWT-1431CA5 K1 FO H15.6 V9.1 AT38 AT39
(RGMD53)	BTWT-1431CA5 K1 FO H15.6 V9.1 AT38.1 AT39

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
1.000	.000	45.000	20.000	SREF	5500.0000	SQ.FT.
1.000	.000	45.000	20.000	LREF	327.8000	IN.
1.000	.000	45.000	20.000	BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

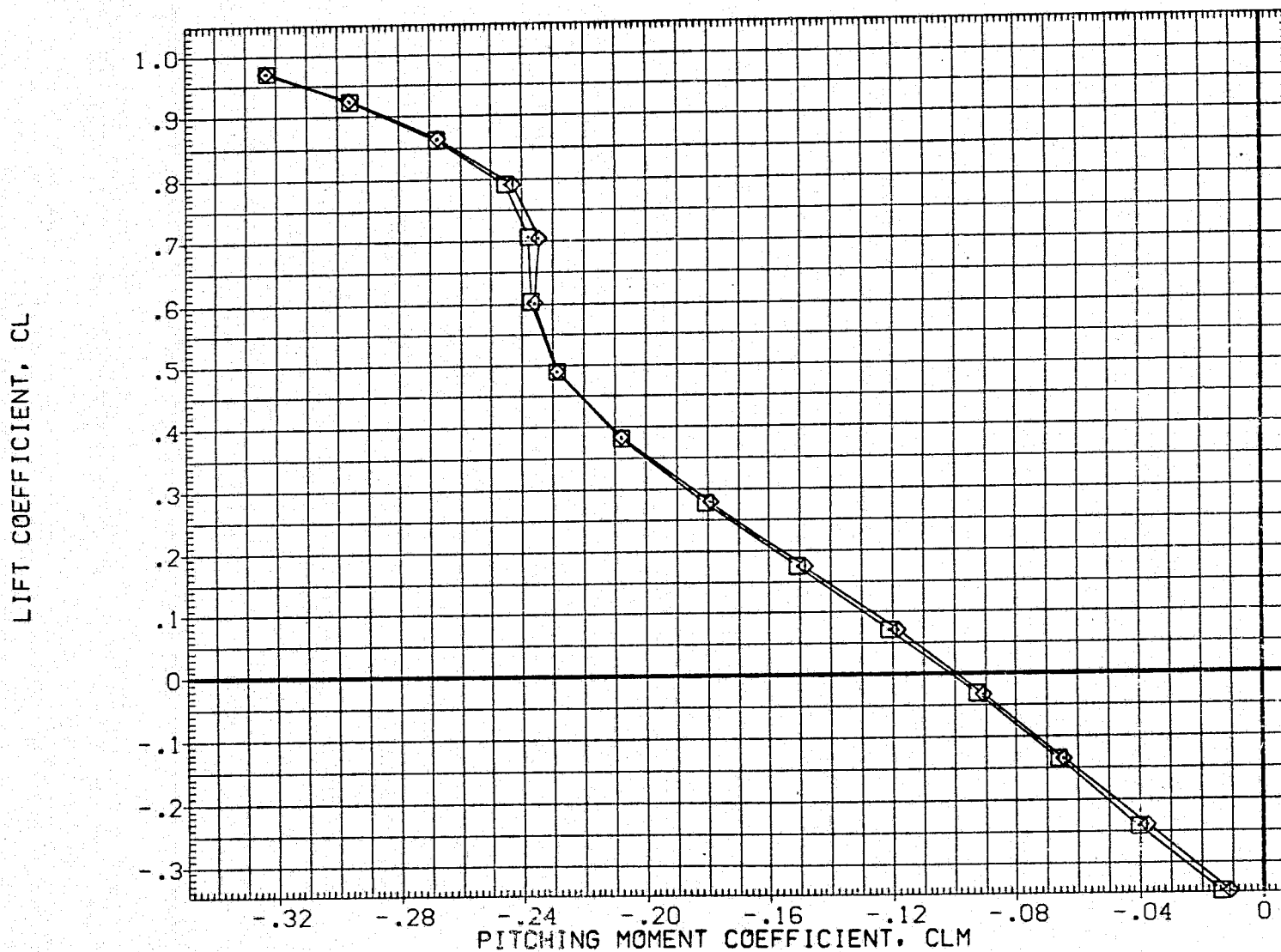


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMD45)	DATA NOT AVAILABLE
(RGMD52)	BTWT-1431CAS KI FO H15.6 V9.1 AT38 AT39
(RGMD53)	BTWT-1431CAS KI FO H15.6 V9.1 AT38.1 AT39

STAB	SI-2	S3-4	S5-6	REFERENCE INFORMATION	
1.000	.000	45.000	20.000	SREF	5500.0000 SQ.FT.
1.000	.000	45.000	20.000	LREF	327.8000 IN.
1.000	.000	45.000	20.000	BREF	2348.0000 IN.
				XMRP	1339.9100 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

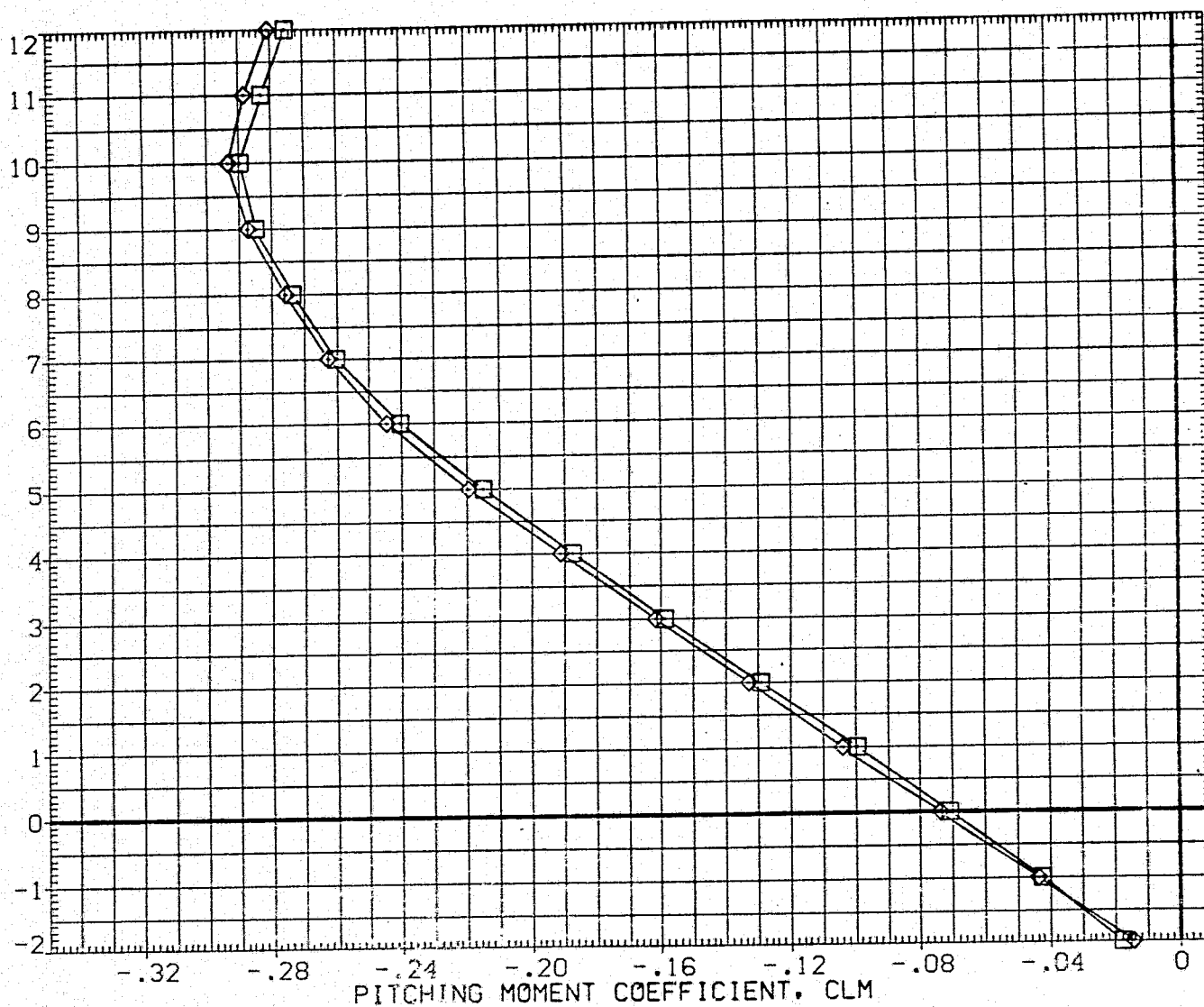


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMO45)	BTWT-1431CAS KI FO H15.6 V9.1
(RGMO52)	BTWT-1431CAS KI FO H15.6 V9.1 AT38 AT39
(RGMO53)	BTWT-1431CAS KI FO H15.6 V9.1 AT38.1 AT39

STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
1.000	.000	45.000	20.000	SREF	5500.0000	SQ.FT.
1.000	.000	45.000	20.000	LREF	327.8000	IN.
1.000	.000	45.000	20.000	BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

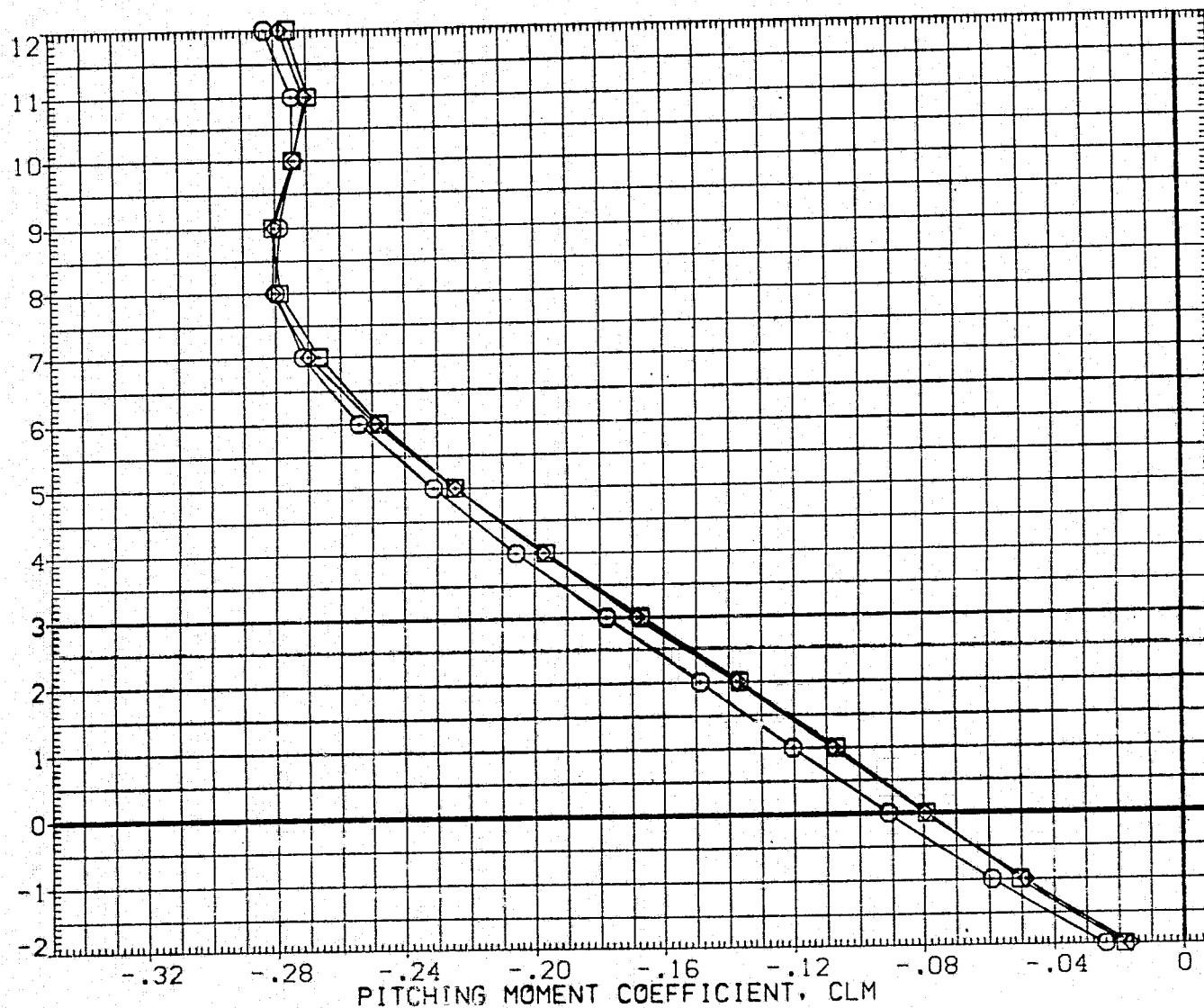


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(B)MACH = .50



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM045) BTWT-1431CA5 KI FO H15.6 V9.1  
 (RGM052) BTWT-1431CA5 KI FO H15.6 V9.1 AT38 AT39  
 (RGM053) BTWT-1431CA5 KI FO H15.6 V9.1 AT38.1 AT39

STAB S1-2 S3-4 S5-6  
 1.000 .000 45.000 20.000  
 1.000 .000 45.000 20.000  
 1.000 .000 45.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

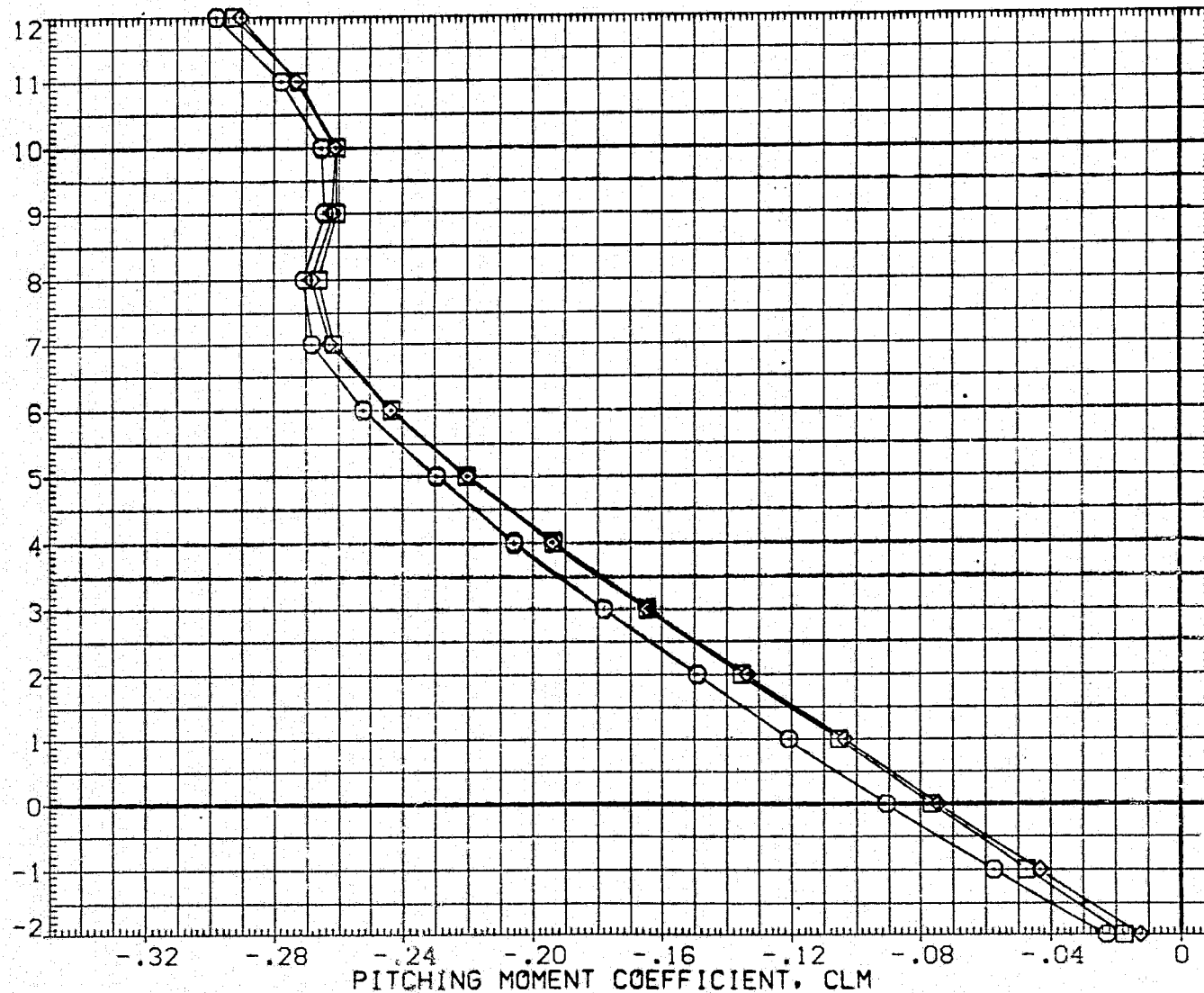


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	S1-2	S3-4	S5-6	REFERENCE INFORMATION		
(RGM045)	DATA NOT AVAILABLE	1.000	.000	45.000	20.000	SREF	5500.0000	50.FT.
(RGM052)	BTWT-1431CAS KI FO H15.6 V9.1 AT38 AT39	1.000	.000	45.000	20.000	LREF	327.8000	IN.
(RGM053)	BTWT-1431CAS KI FO H15.6 V9.1 AT38.1 AT39	1.000	.000	45.000	20.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

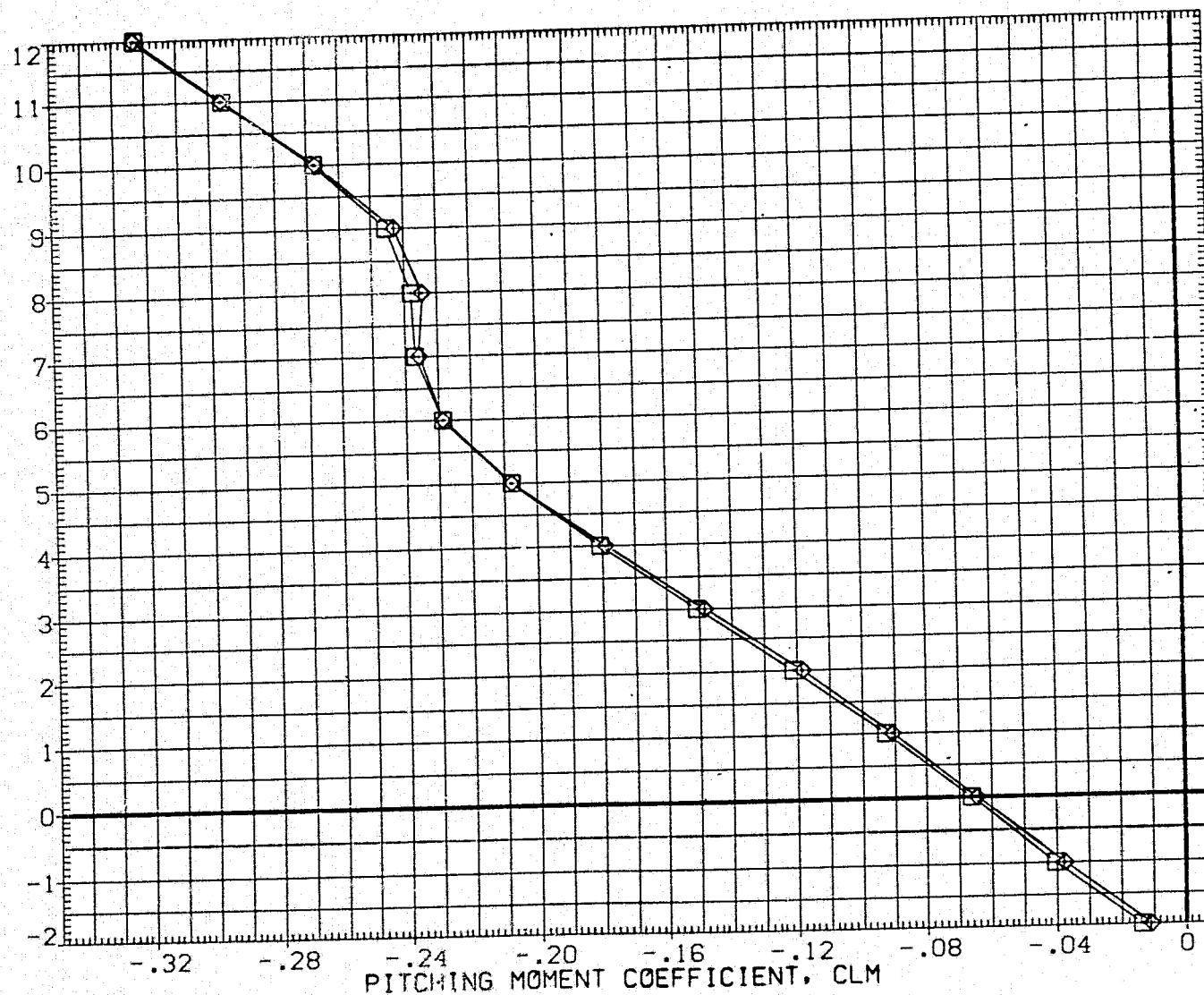


FIG. 228 747 ALONE, EFFECT OF ORB SUPPORTS, FLAPS UP  
(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM039)  $\square$  BTWT-1431CA5 KI FO V9.1  
 (RGM042)  $\square$  BTWT-1431CA5 KI FO H15.6 V9.1

STAB S5-6  
 -2.000 .000  
 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

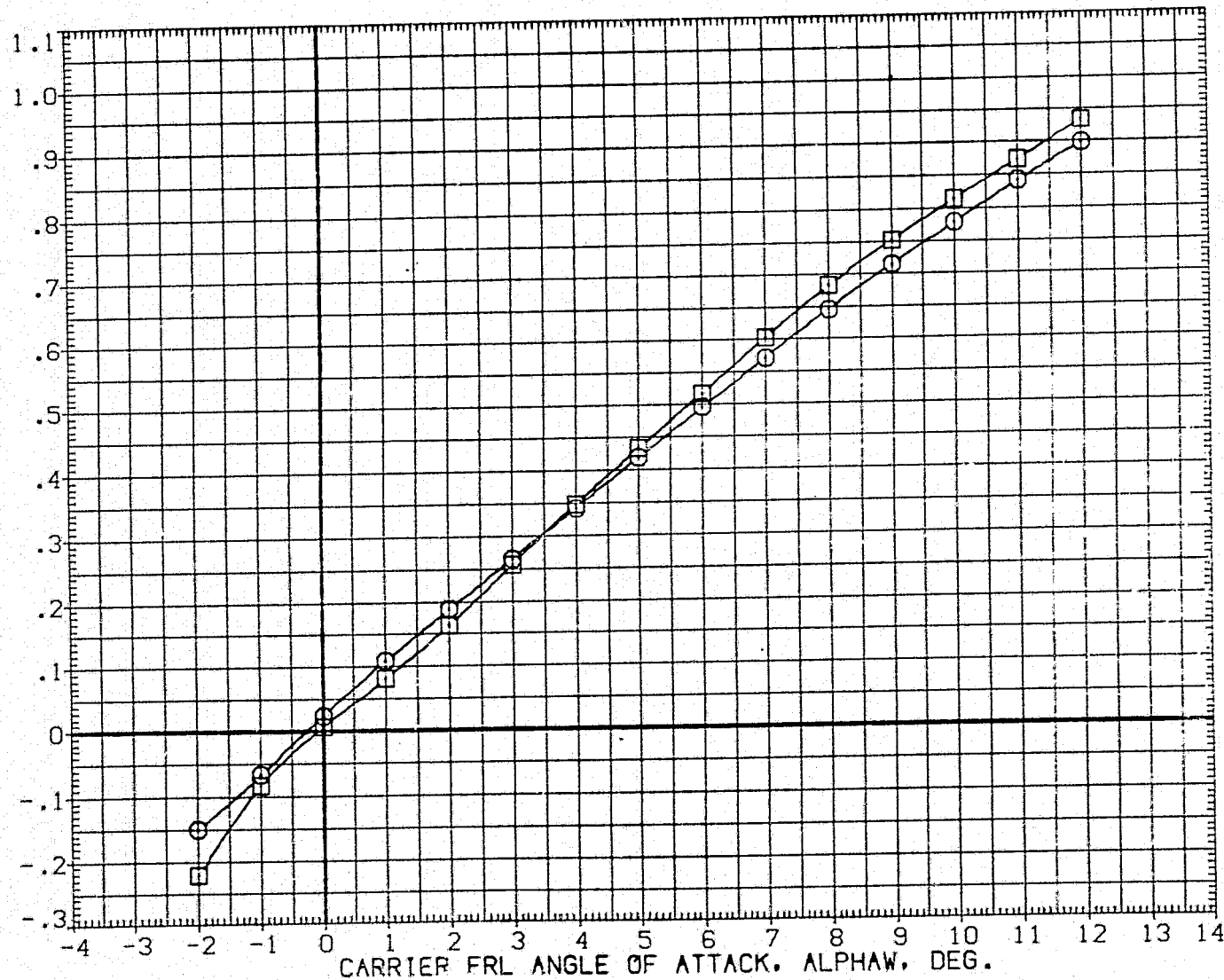


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP

(A)MACH = .15

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO39)  $\square$  BTWT-1431CA5 K1 FO V9.1  
 (RGMO42)  $\square$  BTWT-1431CA5 K1 FO HIS.6 V9.1

STAB SS-6  
 -2.000 .000  
 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

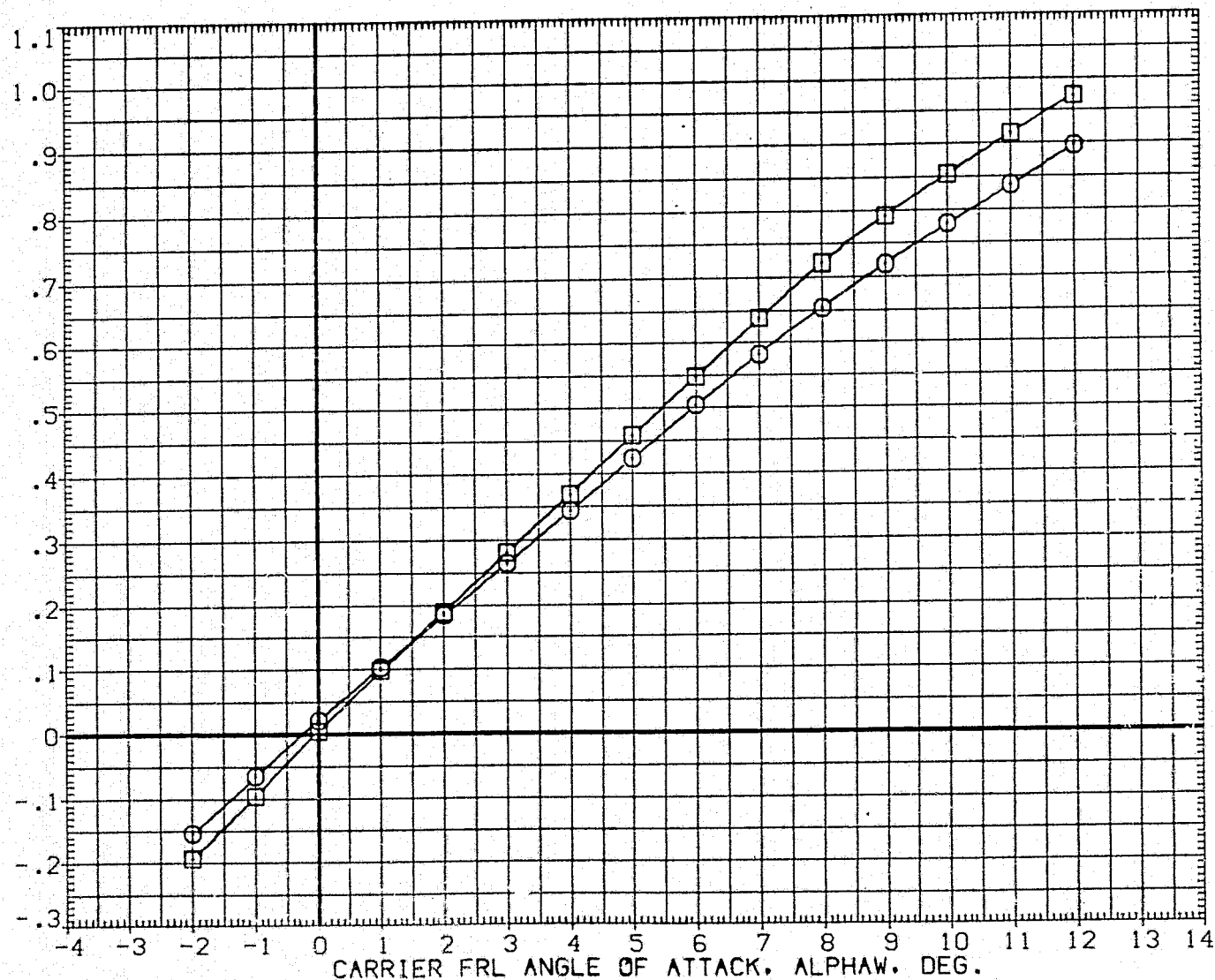


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP

(B)MACH = .30

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (RGMO39)    ○    BTWT-1431CA5 KI FO    V9.1  
 (RGMO42)    □    BTWT-1431CA5 KI FO H15.6 V9.1

STAB    S5-6  
 -2.000    .000  
           .000

REFERENCE INFORMATION  
 SREF    5500.0000    SQ.FT.  
 LREF    327.8000    IN.  
 BREF    2348.0000    IN.  
 XMRP    1339.9100    IN. XC  
 YMRP    .0000    IN. YC  
 ZMRP    190.7500    IN. ZC  
 SCALE    .0300

LIFT COEFFICIENT, CL

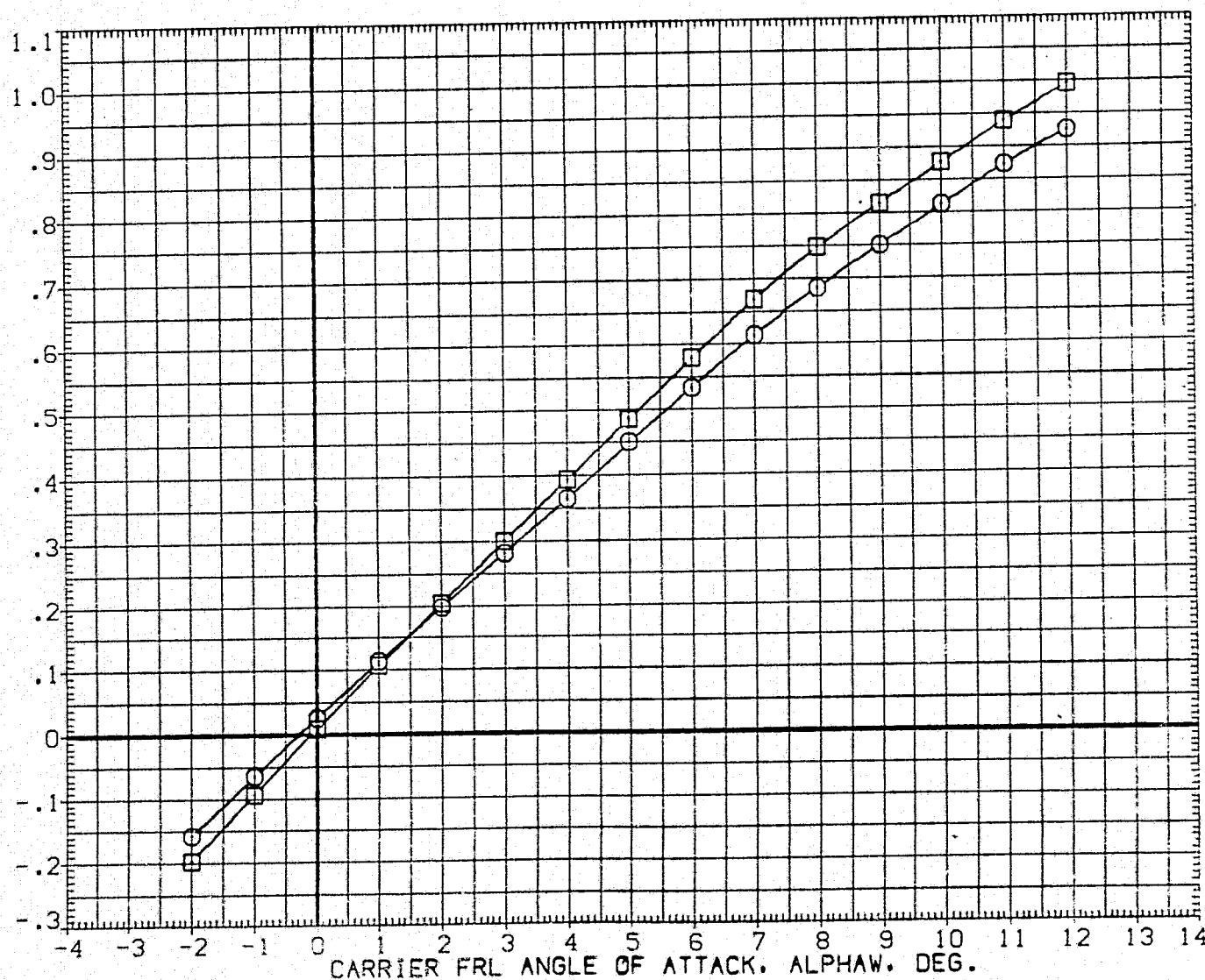


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP

(C)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD39)  $\square$  BTVT-1431CA5 KI FO V9.1  
 (RGMD42)  $\square$  BTVT-1431CA5 KI FO H15.6 V9.1

STAB SS-6  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

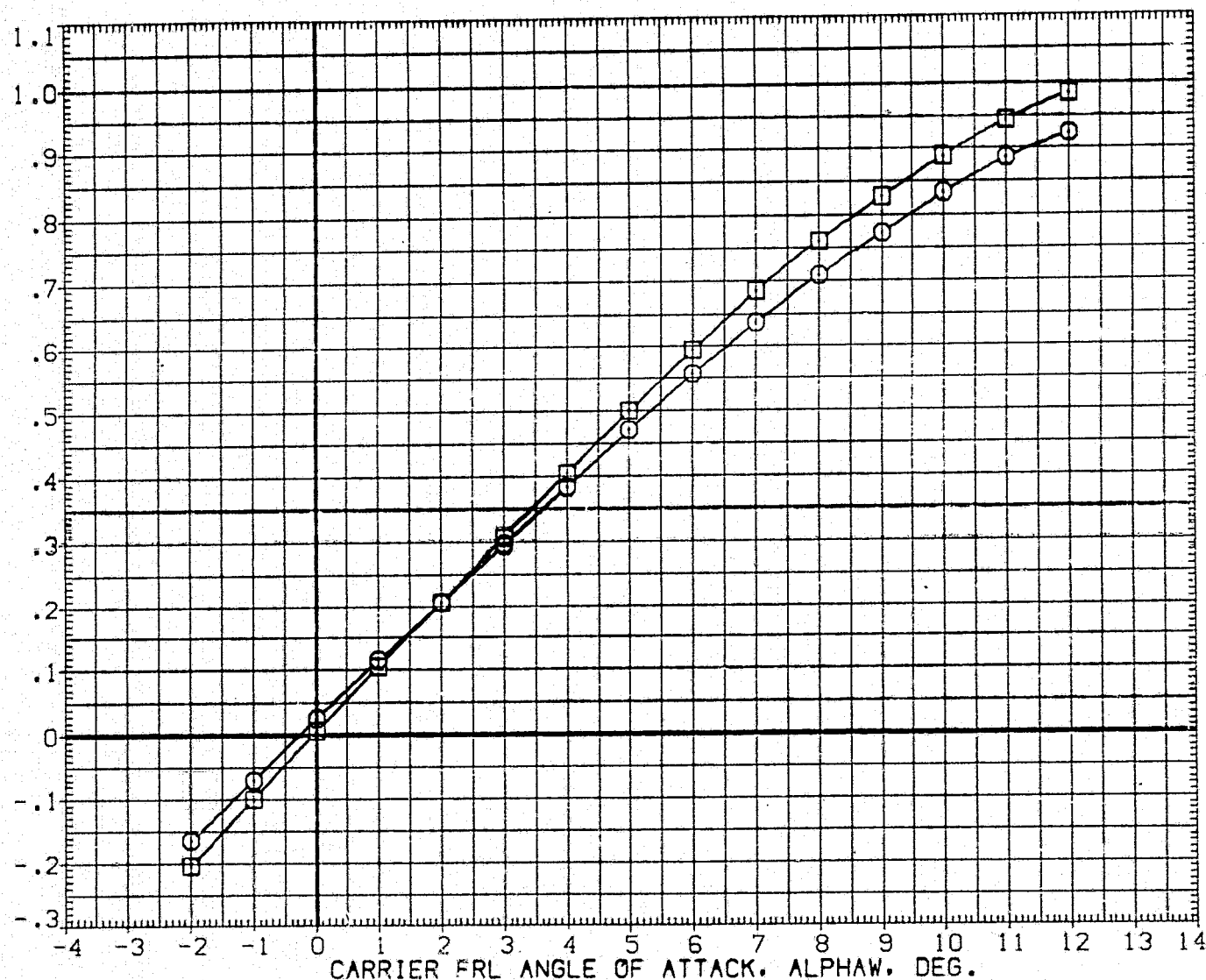


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP

(D)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM039)  $\square$  BTWT-1431CA5 KI FO V9.1  
 (RGM042)  $\square$  BTWT-1431CA5 KI FO H15.6 V9.1

STAB S5-6  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

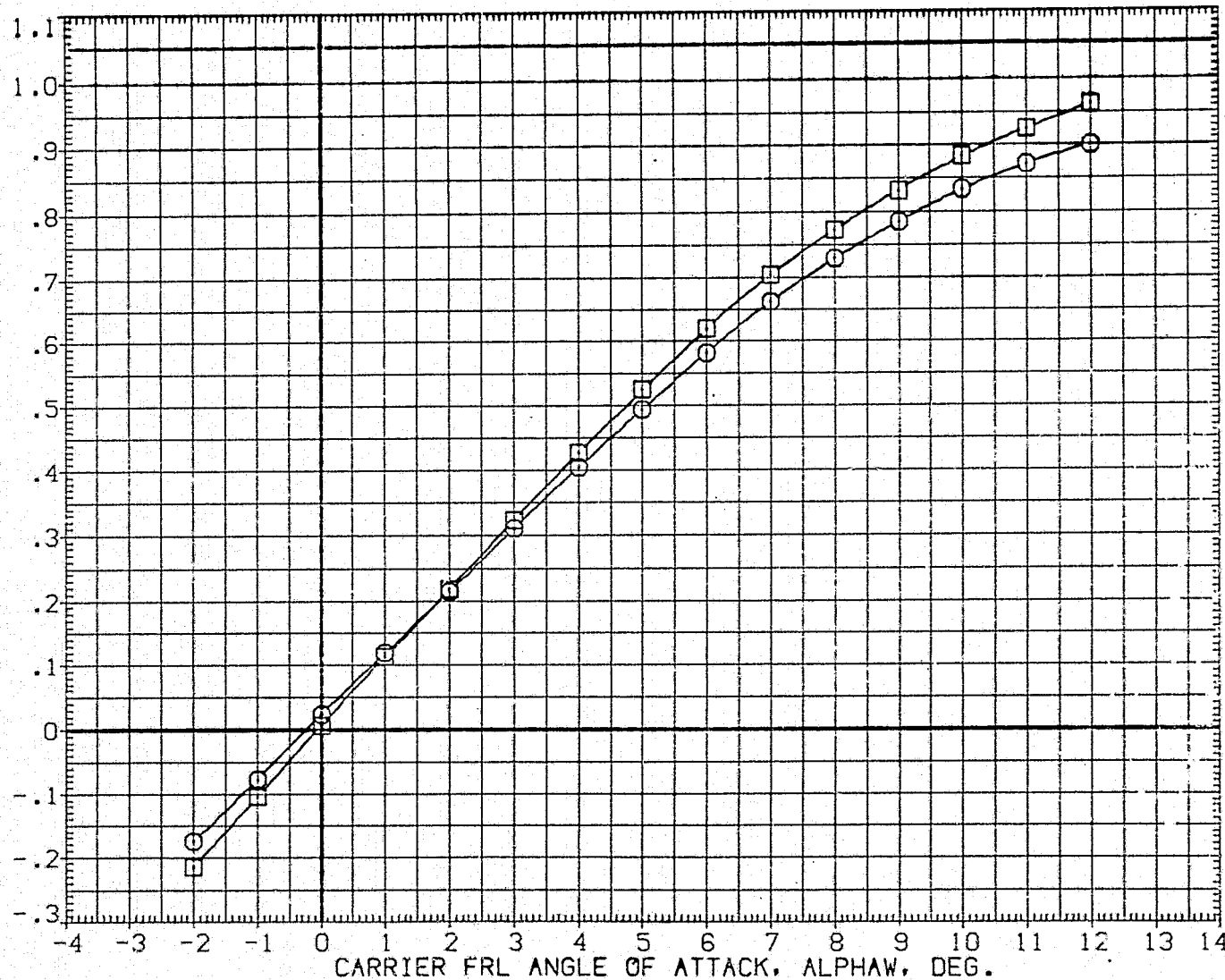


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP

(E)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD39) ○ BTWT-1431CAS KI FO V9.1  
 (RGMD42) □ BTWT-1431CAS KI FO H15.6 V9.1

STAB S5-6  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

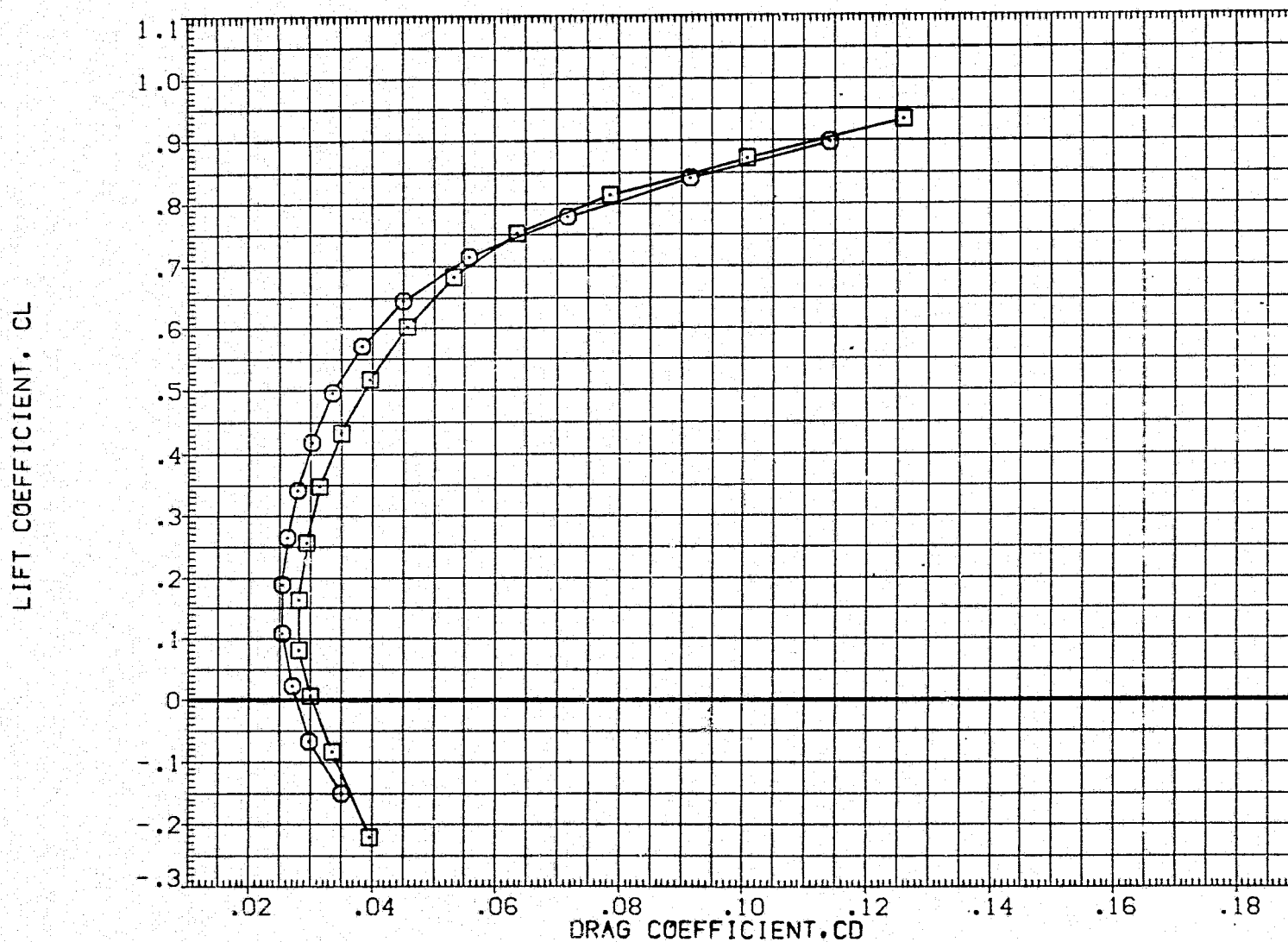


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP

(A)MACH = .15



DATA SET SYMBOL      CONFIGURATION DESCRIPTION  
 (RGM039)      ○      BTWT-1431CA5 KI FO      V9.1  
 (RGM042)      □      BTWT-1431CA5 KI FO H15.6      V9.1

STAB      S5-6  
 -2.000      .000

REFERENCE INFORMATION  
 SREF      5500.0000      SQ.FT.  
 LREF      327.8000      IN.  
 BREF      2348.0000      IN.  
 XMRP      1339.9100      IN. XC  
 YMRP      .0000      IN. YC  
 ZMRP      190.7500      IN. ZC  
 SCALE      .0300

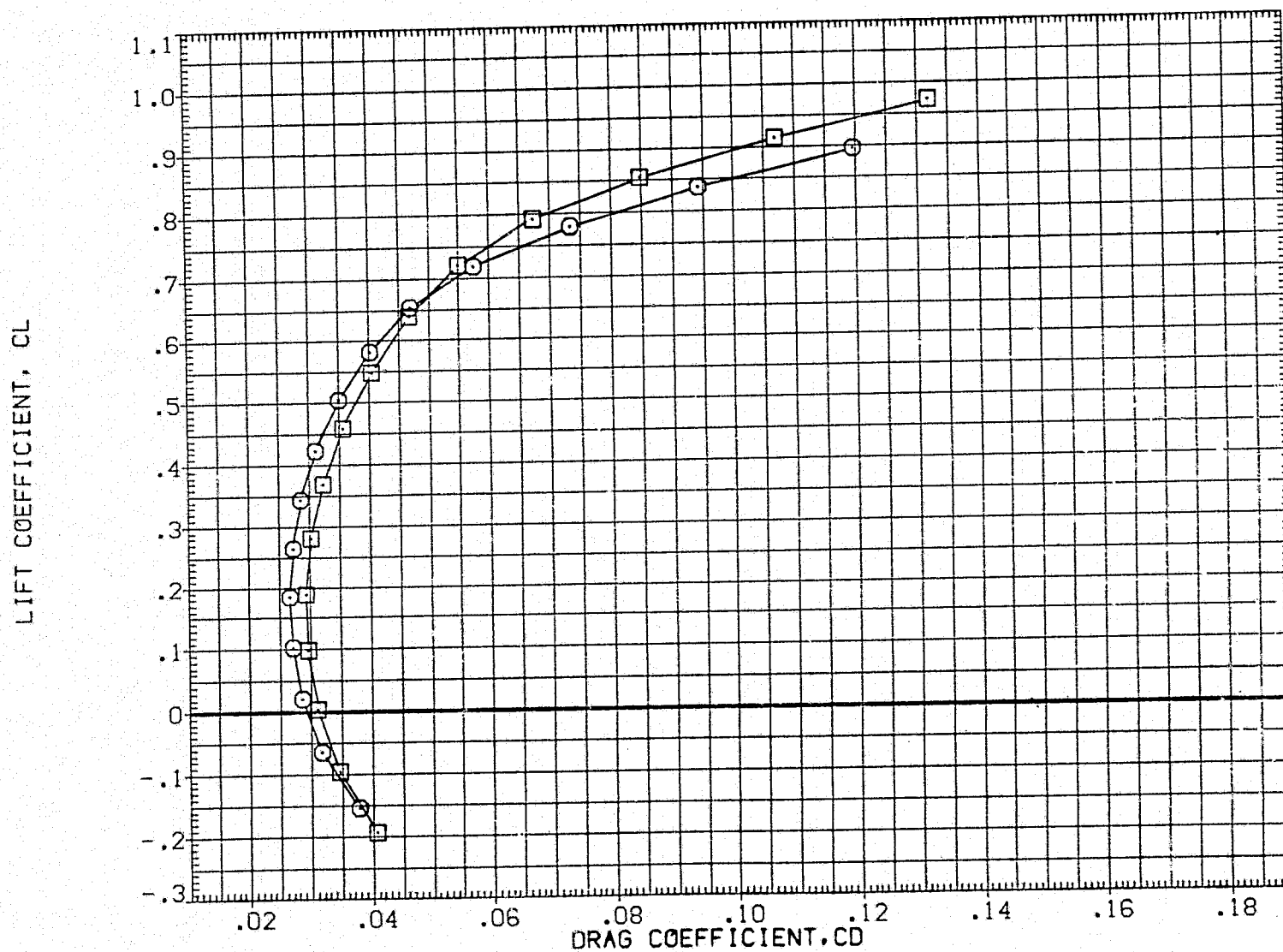


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP  
 (B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMD39) ○	BTWT-1431CA5 KI FO V9.1
(RGMD42) □	BTWT-1431CA5 KI FO H15.6 V9.1

STAB	SS-6
-2.000	.000
	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

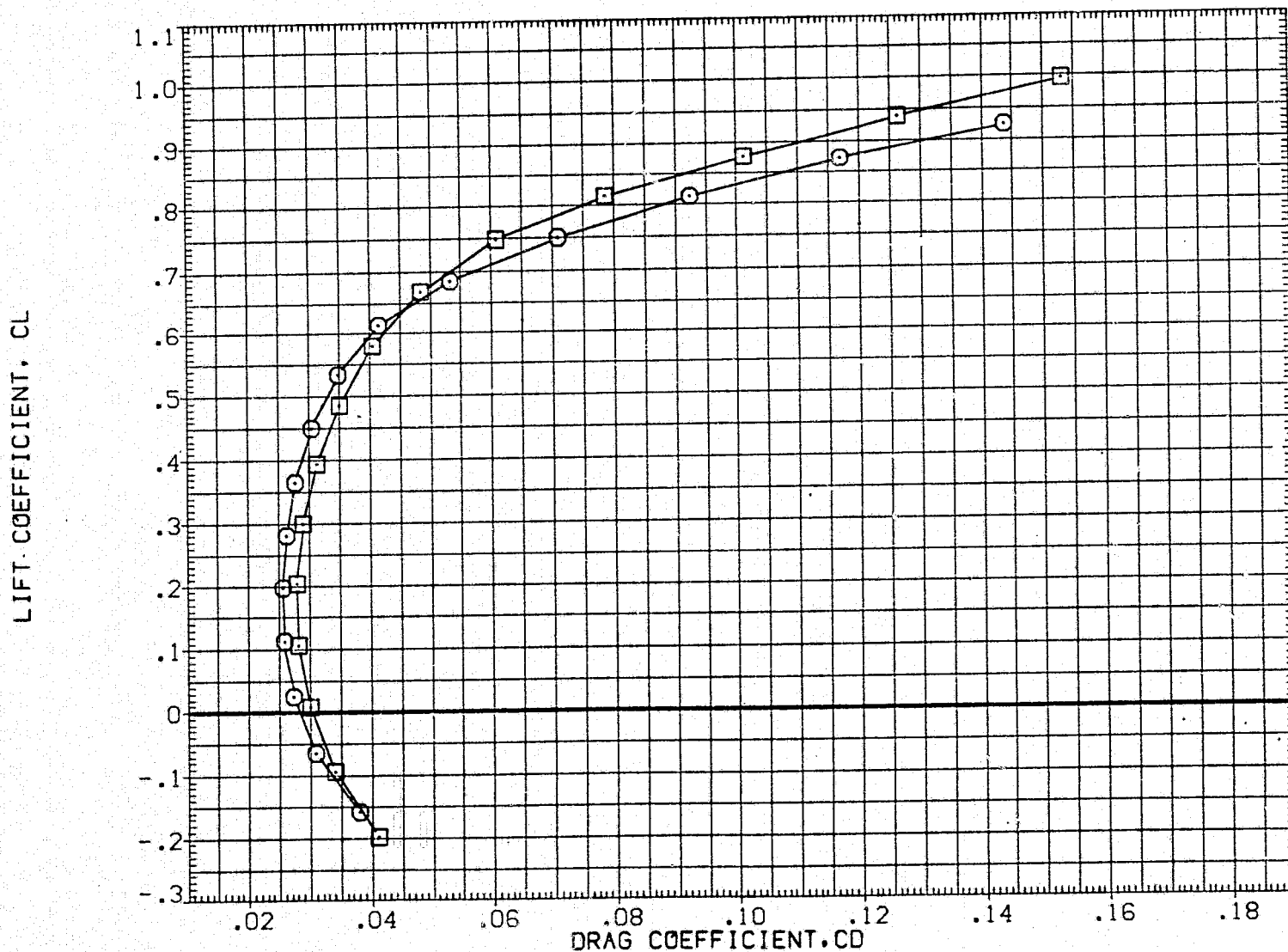


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP  
(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM039) ○	BTWT-1431CA5 K1 FO V9.1
(RGM042) □	BTWT-1431CA5 K1 FO H15.6 V9.1

STAB	SS-6
	.000
-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.9000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

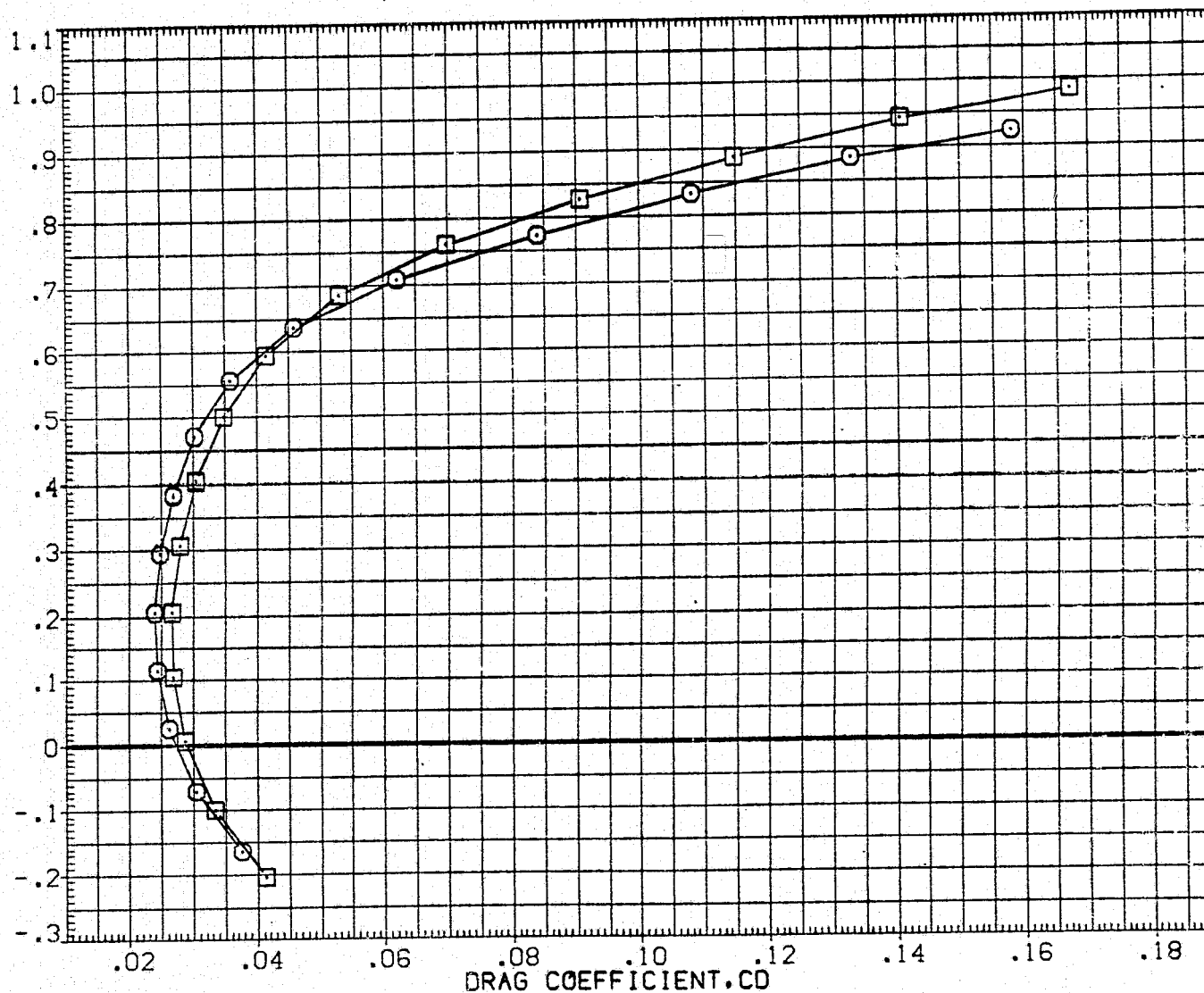


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP  
(CD)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO39)  $\square$  BTWT-1431CA5 K1 FO V9.1  
 (RGMO42)  $\square$  BTWT-1431CA5 K1 FO H15.6 V9.1

STAB S5-6  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

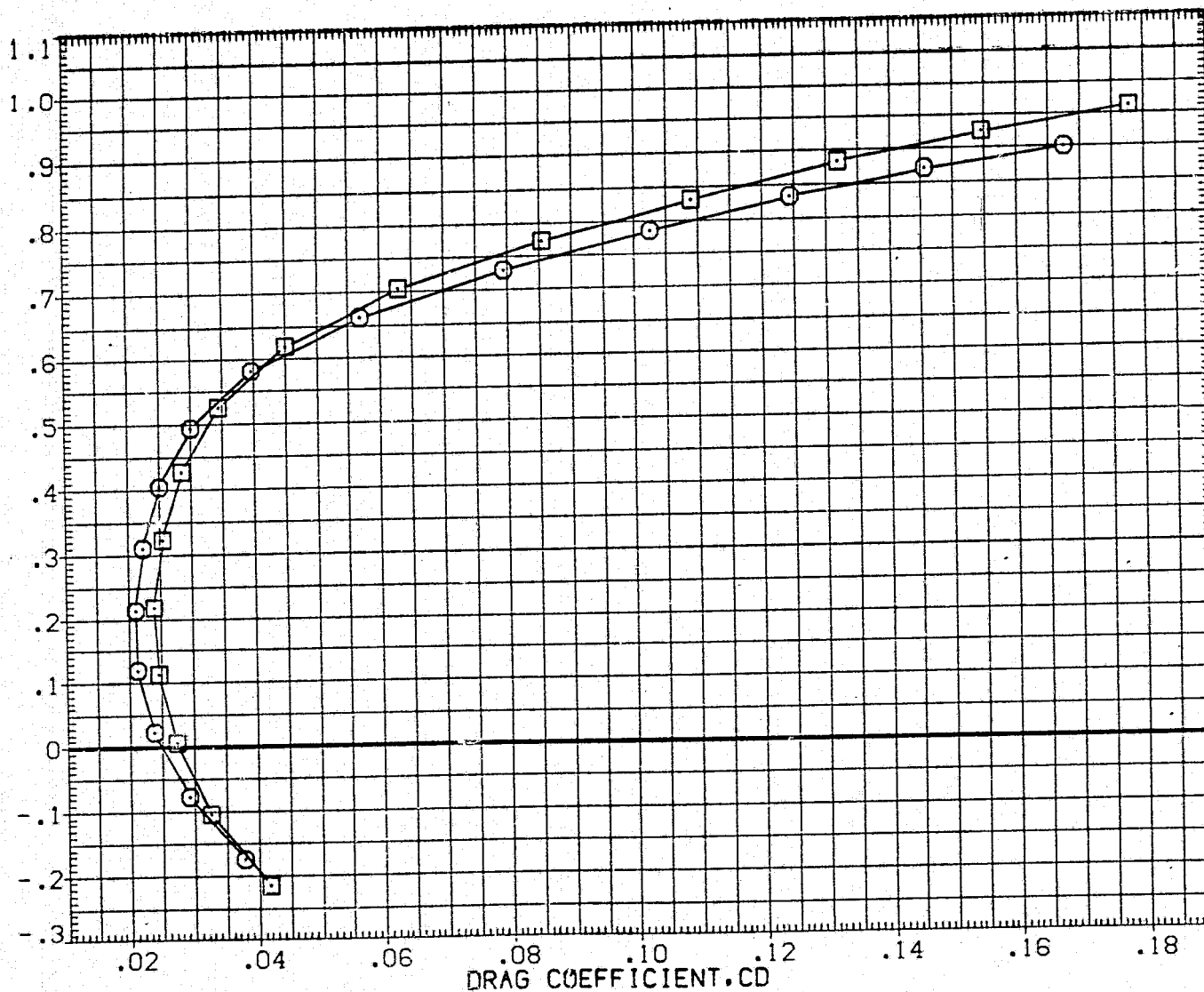


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP  
 (E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM039) ○	BTWT-1431CAS K1 FO V9.1
(RGM042) □	BTWT-1431CAS K1 FO H15.6 V9.1

STAB	S5-6
	.000
-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

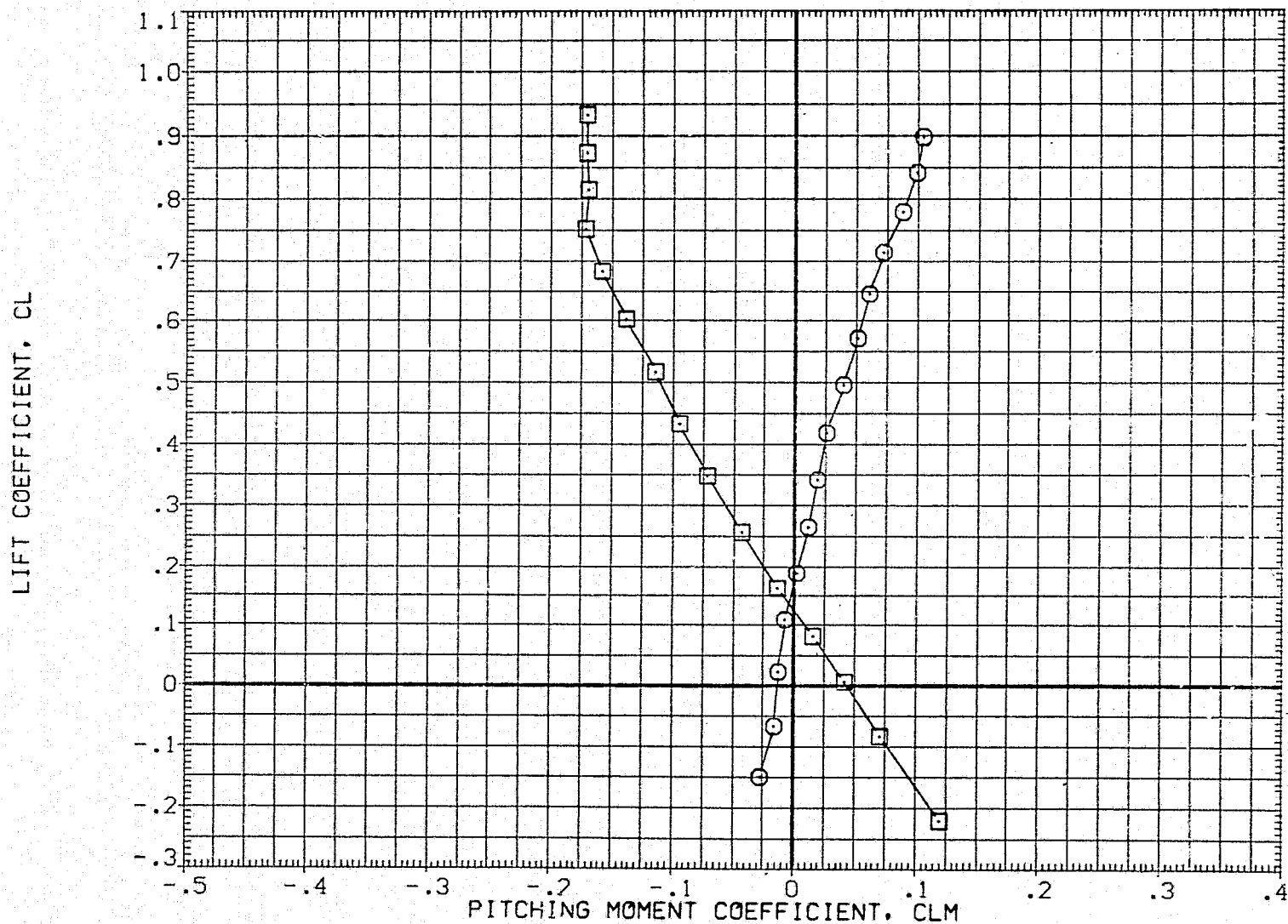


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP

(A)MACH = .15

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM039)  $\square$  BTWT-1431CA5 K1 FO V9.1  
 (RGM042)  $\square$  BTWT-1431CA5 K1 FO H15.6 V9.1

STAB S5-6  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

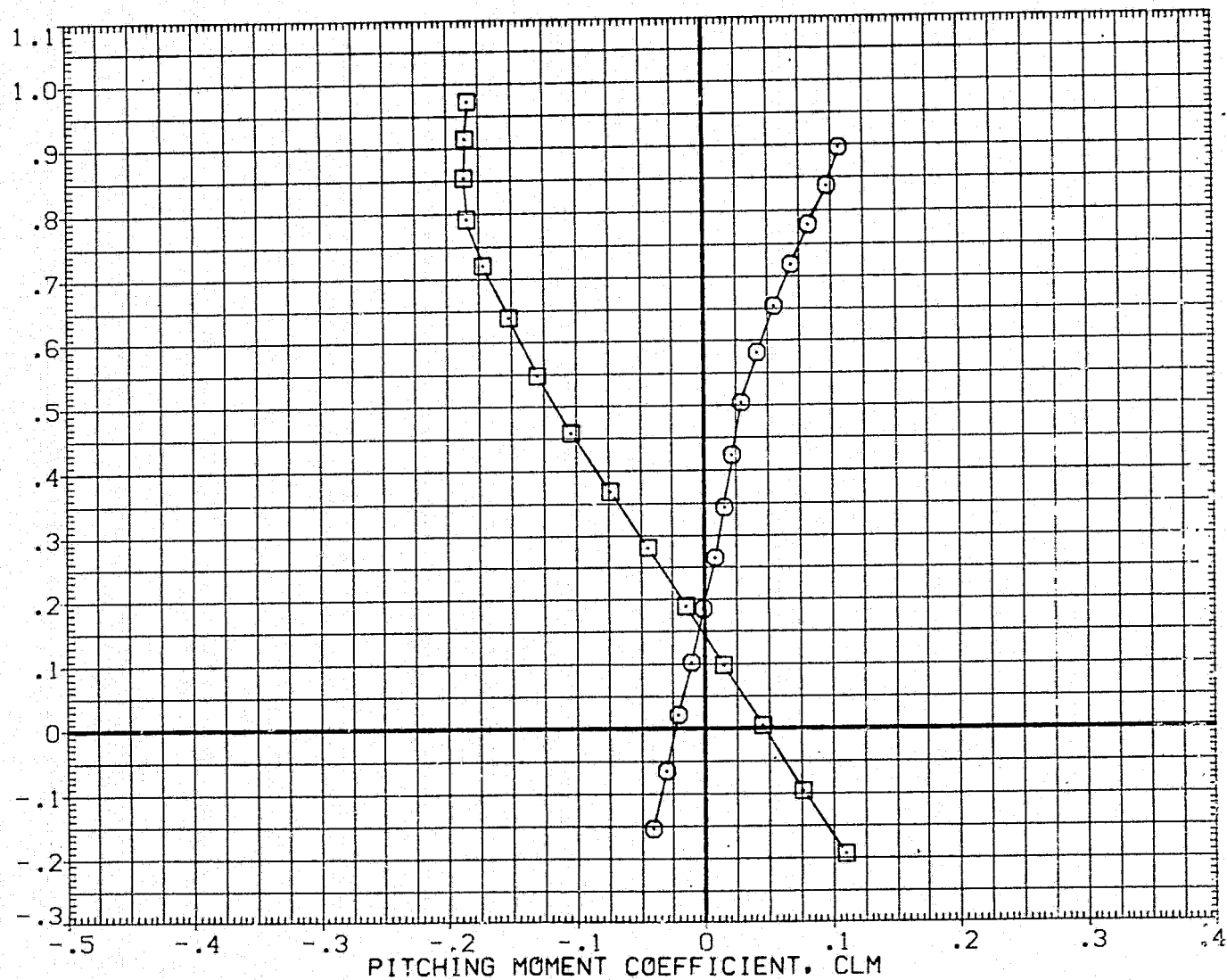


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP

(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM039) ○	BTWT-1431CA5 K1 FO V9.1
(RGM042) □	BTWT-1431CA5 K1 FO H15.6 V9.1

STAB	S5-6
	.000
-2.000	.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

LIFT COEFFICIENT, CL

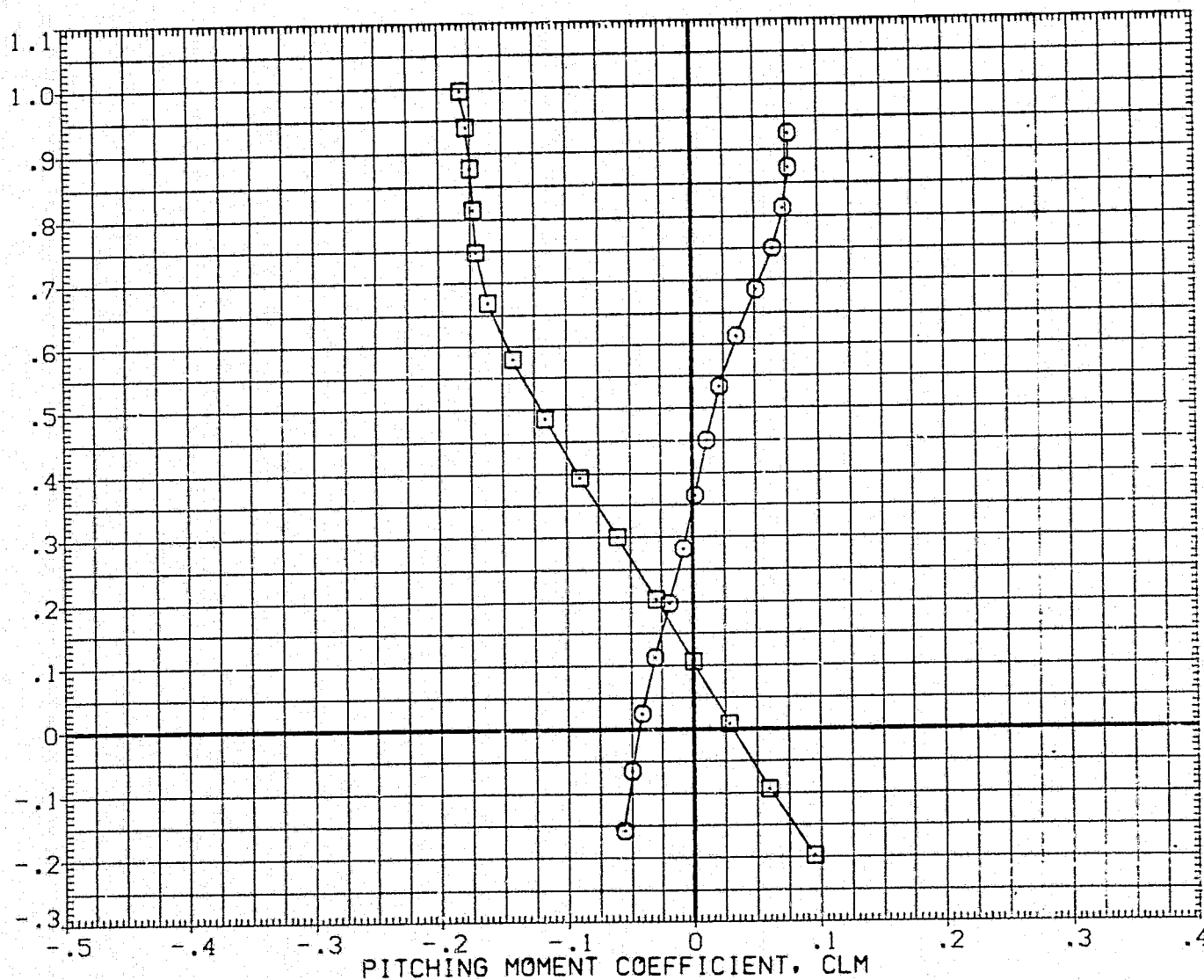


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP  
(C)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM039)  $\square$  BTWT-1431CA5 K1 FO V9.1  
 (RGM042)  $\square$  BTWT-1431CA5 K1 FO H15.6 V9.1

STAB 55-6  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

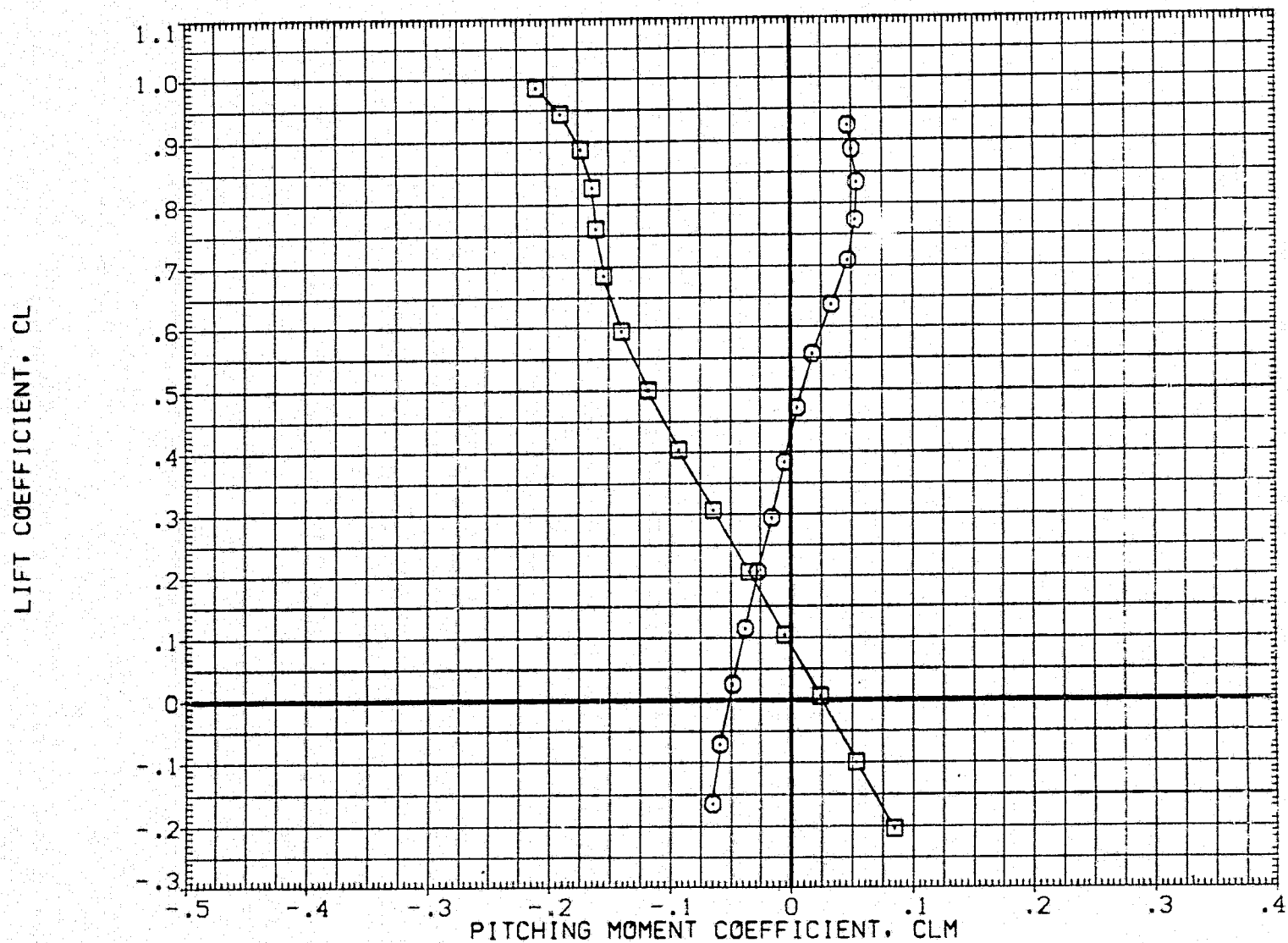


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP

(D)MACH = .60



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM039) ☐ BTWT-1431CA5 KI FO V9.1  
 (RGM042) ☐ BTWT-1431CA5 KI FO H15.6 V9.1

STAB S5-6  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

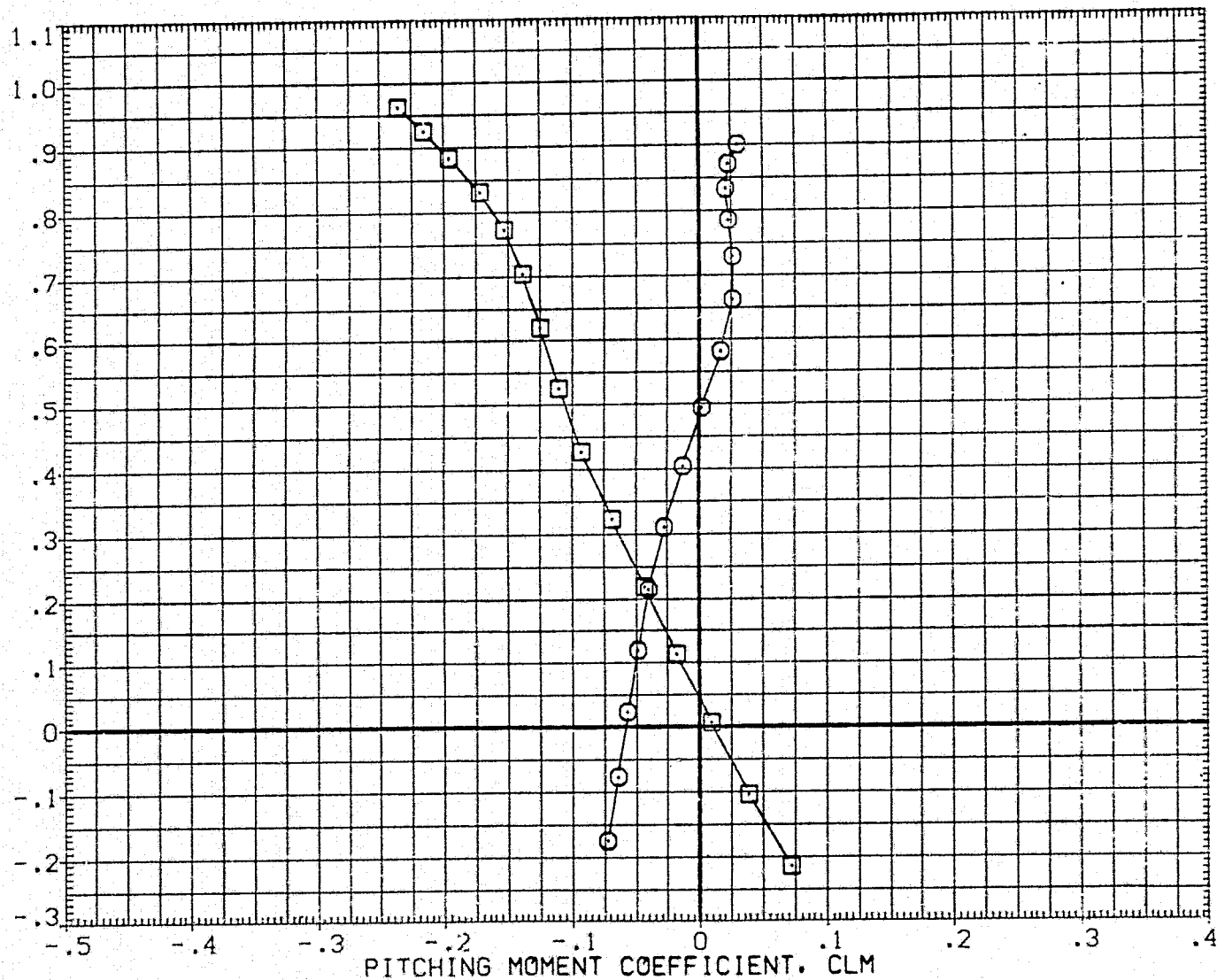


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP  
 (E)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (R6M039)  $\square$  BTWT-1431CAS KI FO V9.1  
 (R6M042)  $\square$  BTWT-1431CAS KI FO H15.6 V9.1

STAB 55-6  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

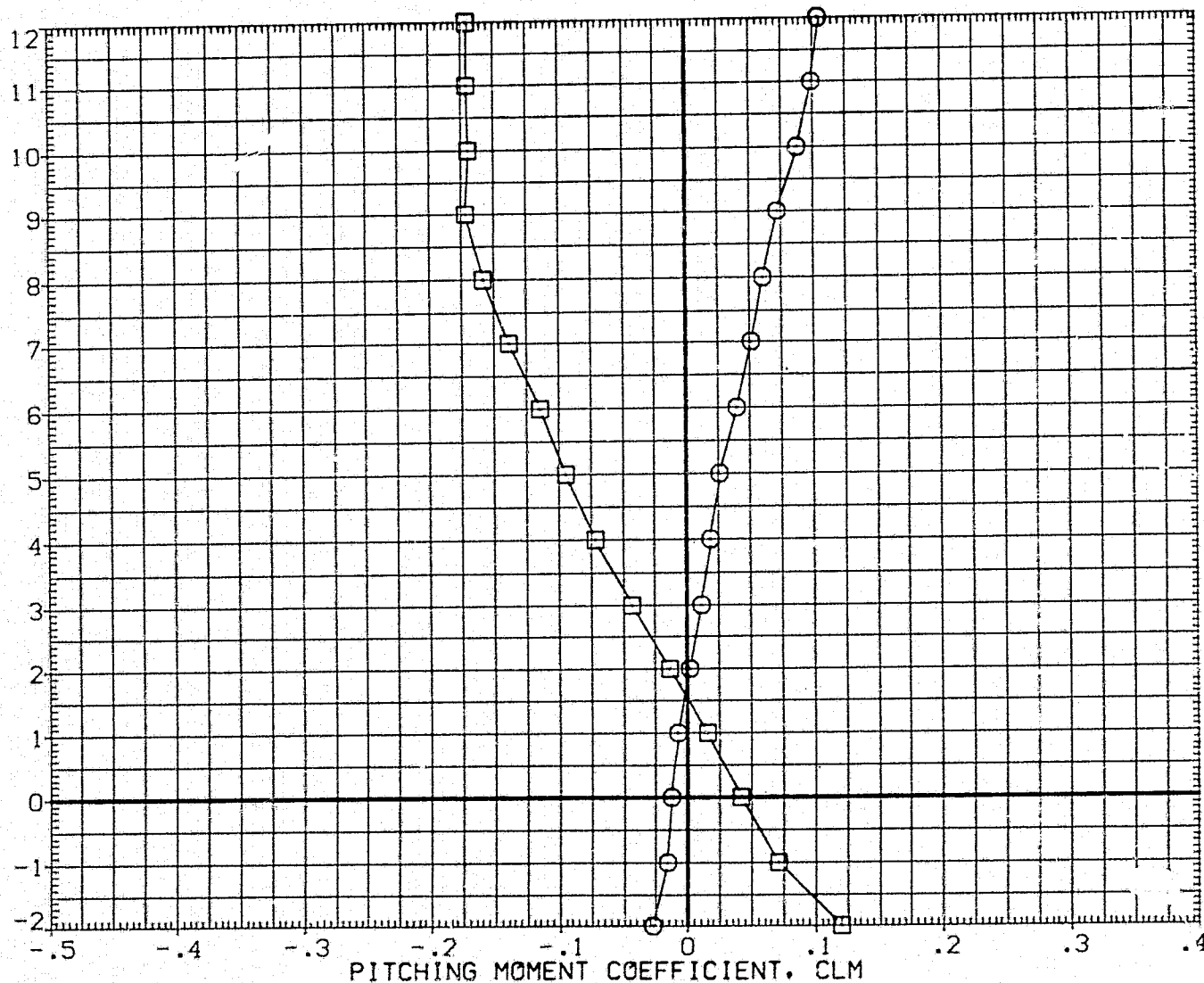


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP  
 (A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM039) ○	BTWT-1431CA5 KI FO V9.1
(RGM042) □	BTWT-1431CA5 KI FO H15.6 V9.1

STAB	S5-6
-2.000	.000
	.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

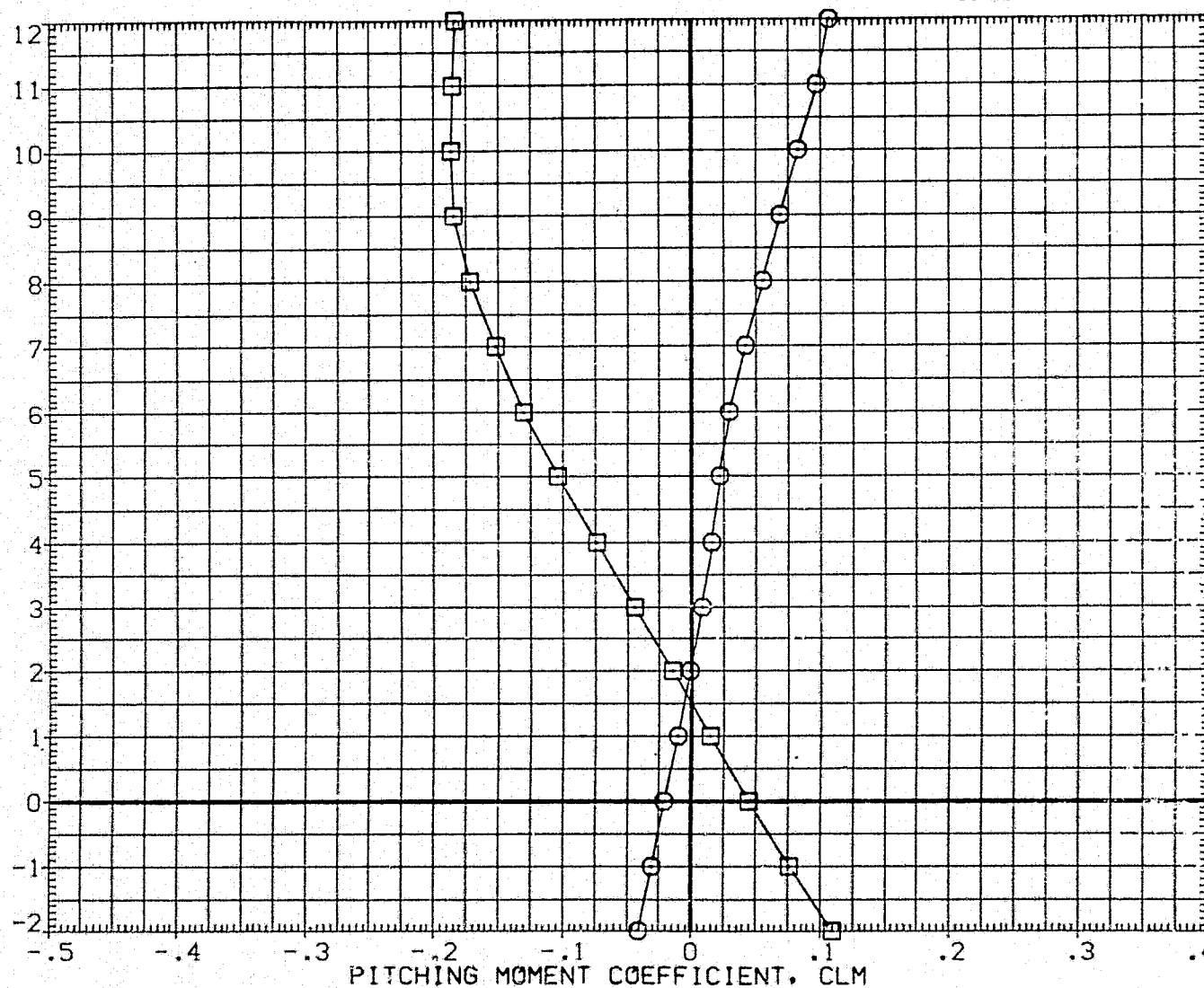


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP

(B)MACH = .30

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (RSM039)    ☐    BTWT-1431CAS K1 FO    V9.1  
 (RSM042)    ☐    BTWT-1431CAS K1 FO H15.6 V9.1

STAB    S5-6  
 -2.000    .000

REFERENCE INFORMATION  
 SREF    5500.0000    SQ.FT.  
 LREF    327.8000    IN.  
 BREF    2348.0000    IN.  
 XMRP    1339.9100    IN. XC  
 YMRP    .0000    IN. YC  
 ZMRP    190.7500    IN. ZC  
 SCALE    .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

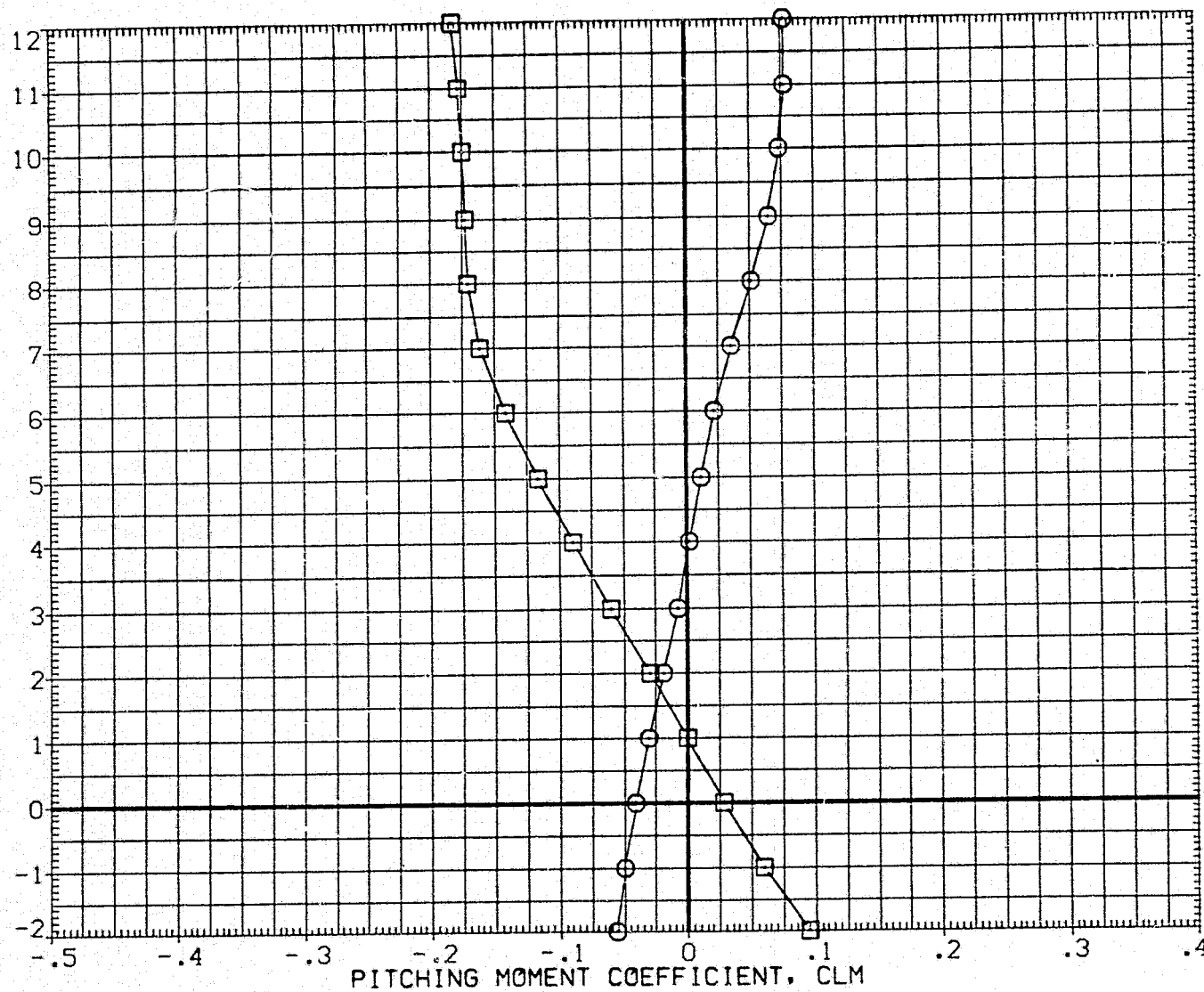


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP

(C)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM039)  $\square$  BTWT-1431CA5 K1 FO V9.1  
 (RGM042)  $\square$  BTWT-1431CA5 K1 FO HIS.6 V9.1

STAB S5-6  
 -2.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

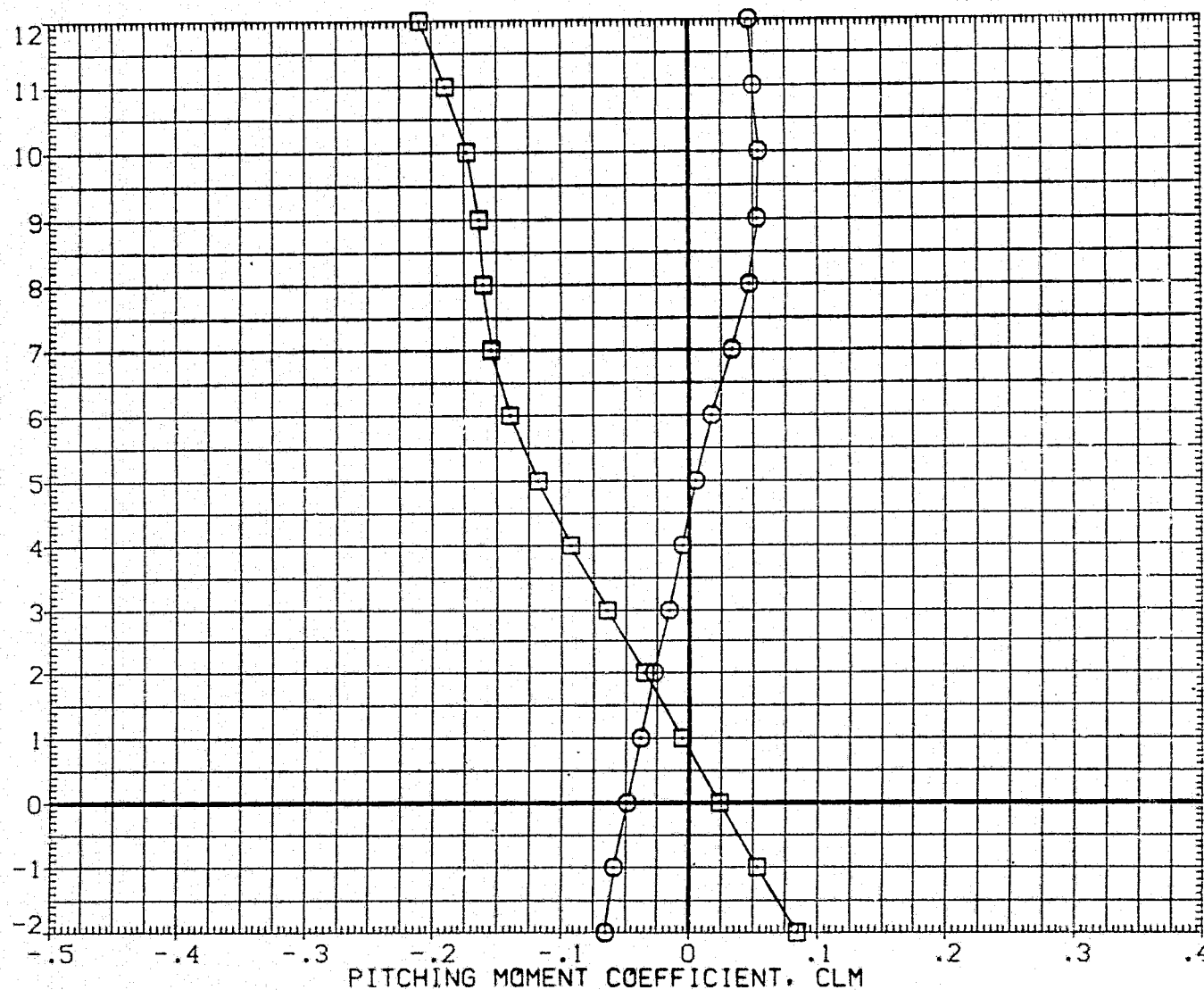


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP

(D)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO39)  $\square$  BTWT-1431CA5 K1 FO V9.1  
 (RGMO42)  $\square$  BTWT-1431CA5 K1 FO H15.6 V9.1

STAB SS-6  
 -2.000 .000  
 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

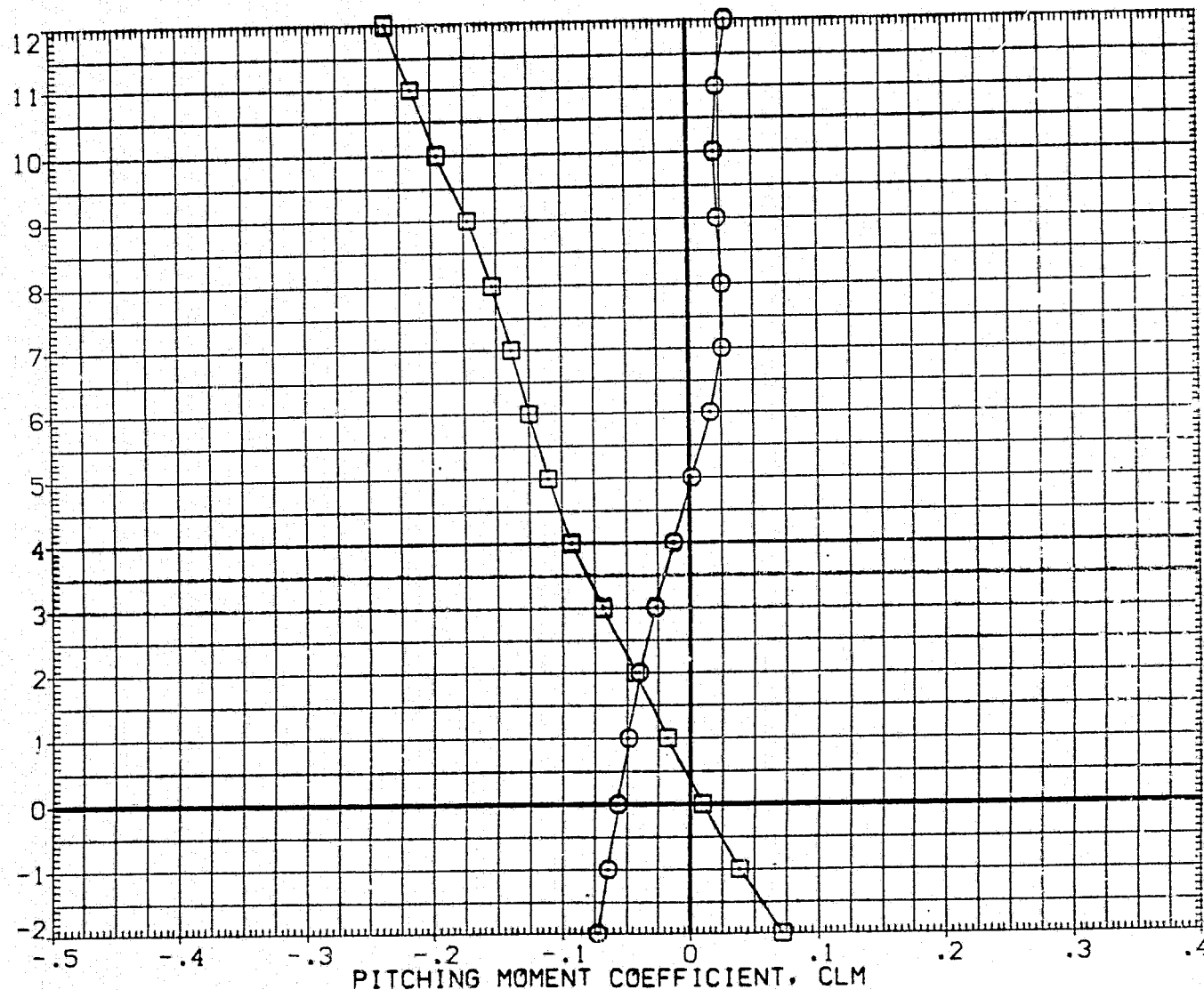


FIG. 229 747 ALONE, STABILIZER EFFECT, FLAPS UP  
 (E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM098)	□ CAS KI FO V9.1 (PLUS. ORB TC5 AT38.2A)
(RGM081)	○ CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)
(RGM084)	◇ DATA NOT AVAILABLE

STAB	10RB	S5-6
	7.850	20.000
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

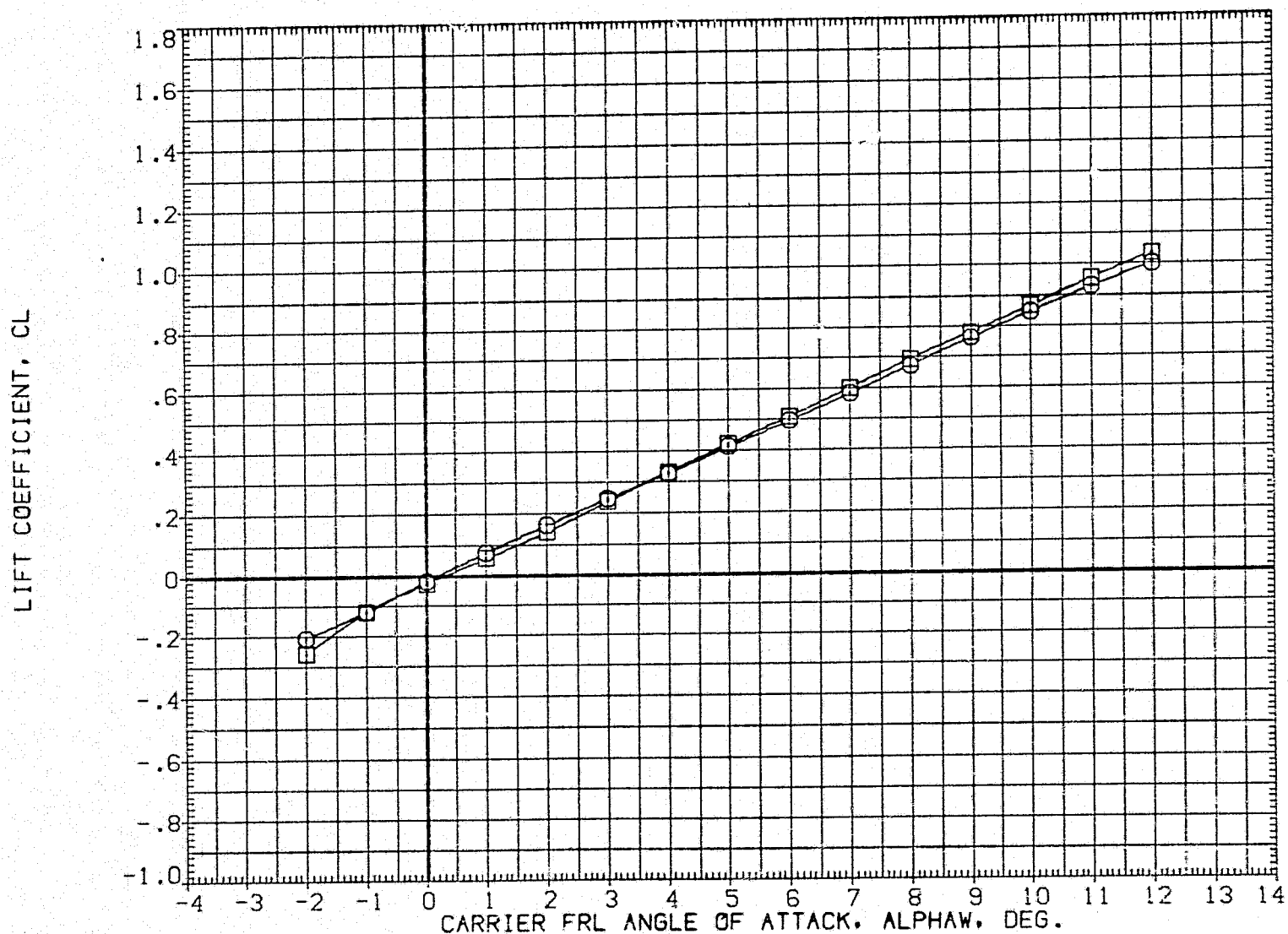


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH  
 (A)MACH = .15

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM098)  $\square$  CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.2A)  
 (RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)  
 (RGM084)  $\diamond$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)

STAB 10RB S5-6  
 7.850 20.000  
 1.000 7.850 20.000  
 -2.000 7.850 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

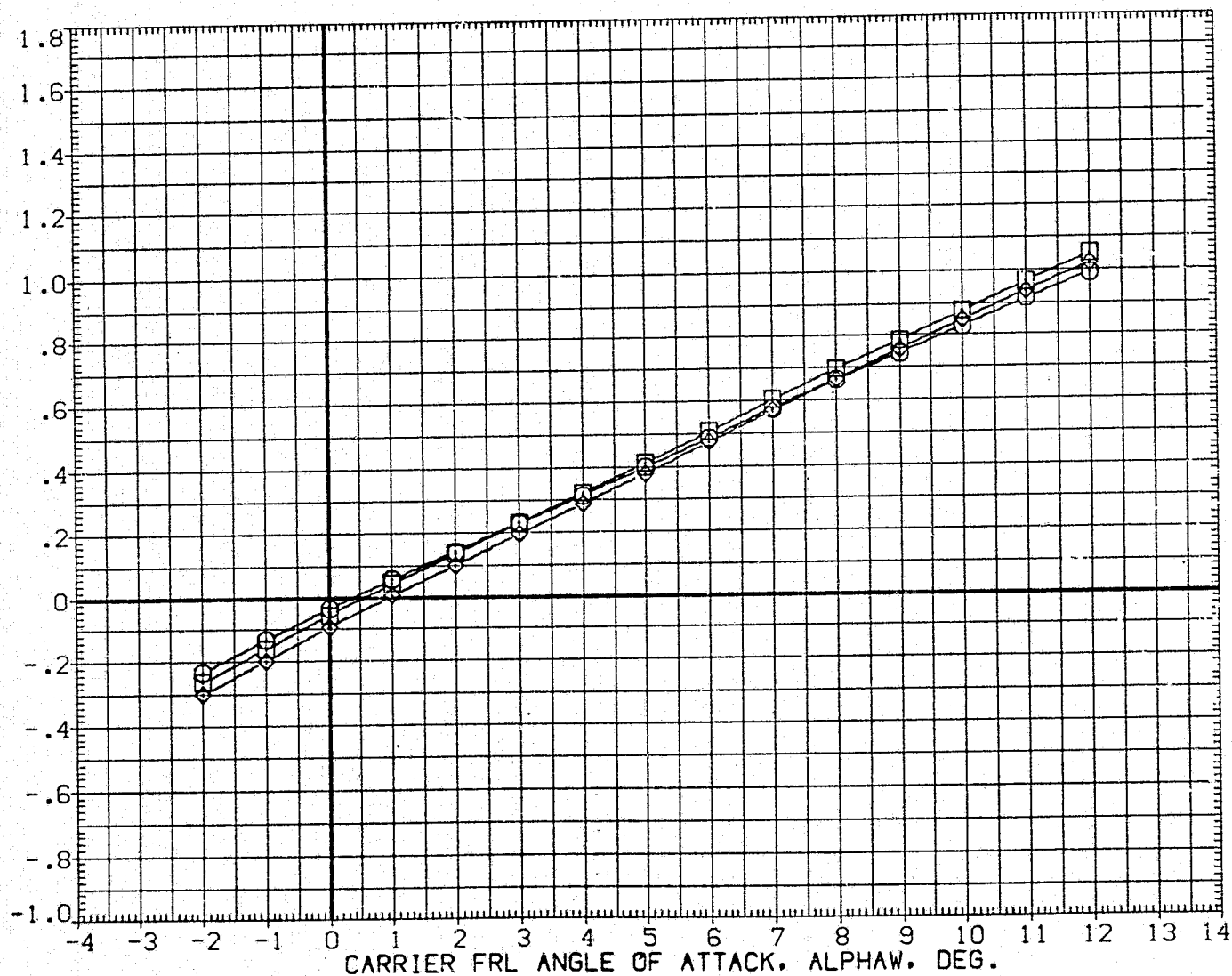


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH

(B)MACH = .30



DATA SET SYMBOL CONFIGURATION DESCRIPTION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM098)	CA5 K1 FO V9.1 (PLUS. ORB TC5 AT38.2A)
(RGM081)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)
(RGM084)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)

STAB	IORB	S5-6
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

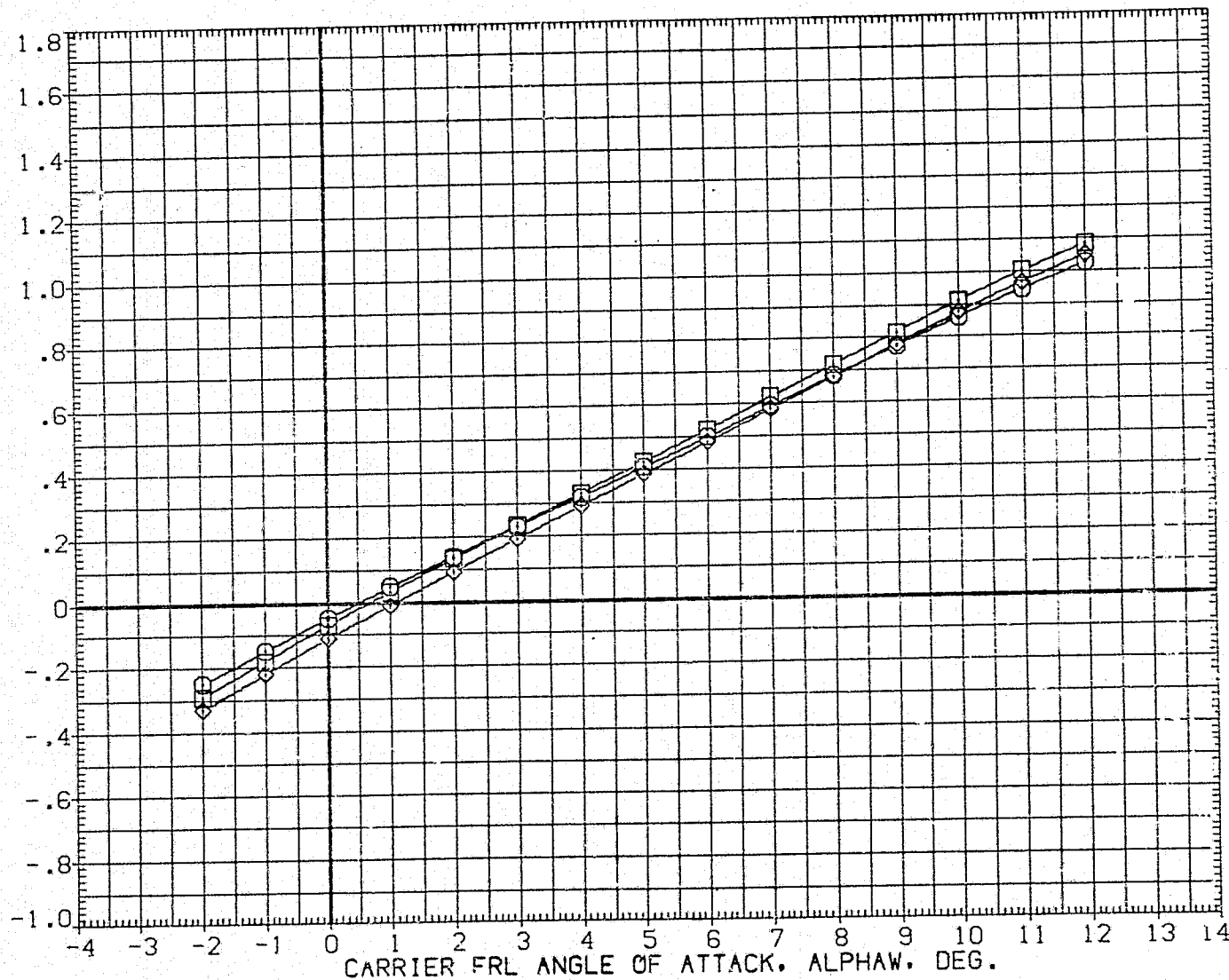


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH

(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION	
(RGM098)	□ CAS K1 FD V9.1 (PLUS. ORB TCS AT38.2A)		7.850	20.000	SREF	5500.0000 SQ.FT.
(RGM081)	◇ CAS K1 FD HIS.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	7.850	20.000	LREF	327.8000 IN.
(RGM084)	◇ CAS K1 FD HIS.6 V9.1 (PLUS. ORB TCS AT38.2 )	-2.000	7.850	20.000	BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

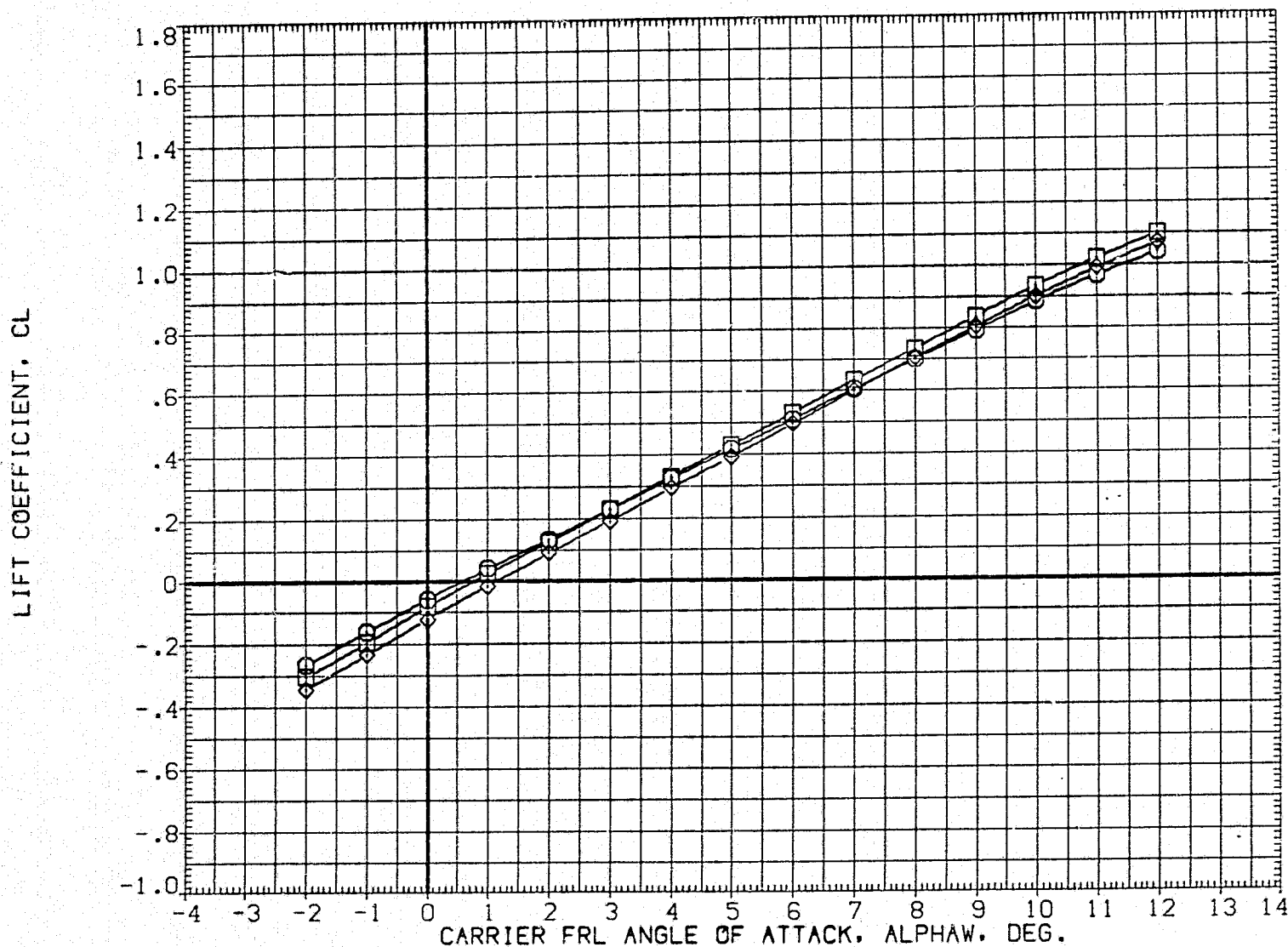


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH

(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION		
(RGM098)	□ CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.2A)		7.950	20.000	SREF	5500.0000	SQ.FT.
(RGM081)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	7.850	20.000	LREF	327.8000	IN.
(RGM084)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	-2.000	7.850	20.000	BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

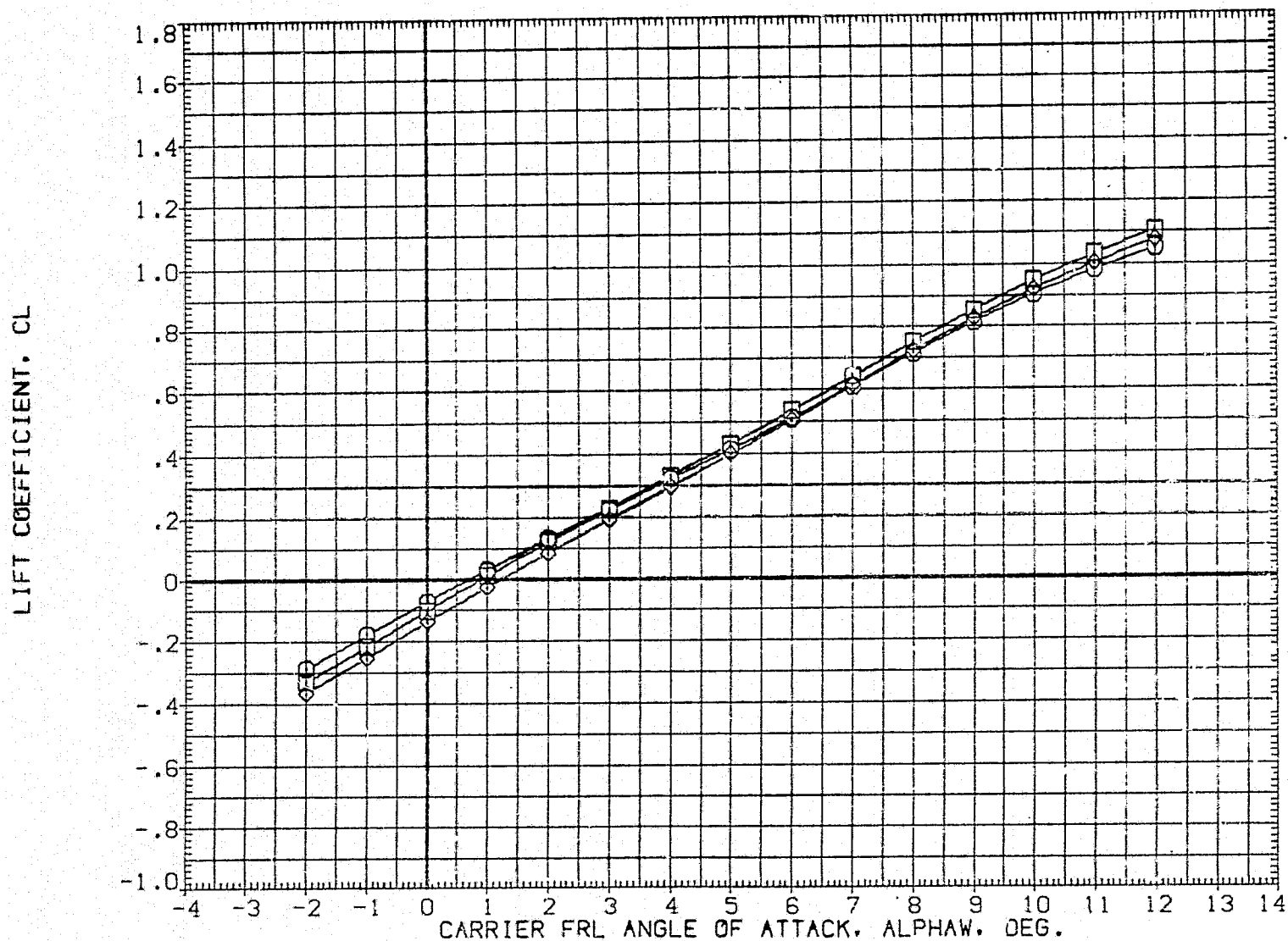


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH  
(E)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO99) CAS K1 FO V9.1 (PLUS. ORB TCS AT38.2A)  
 (RGMO81) CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)  
 (RGMO84) DATA NOT AVAILABLE

STAB 10RB S5-6  
 1.000 7.850 20.000  
 -2.000 7.850 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

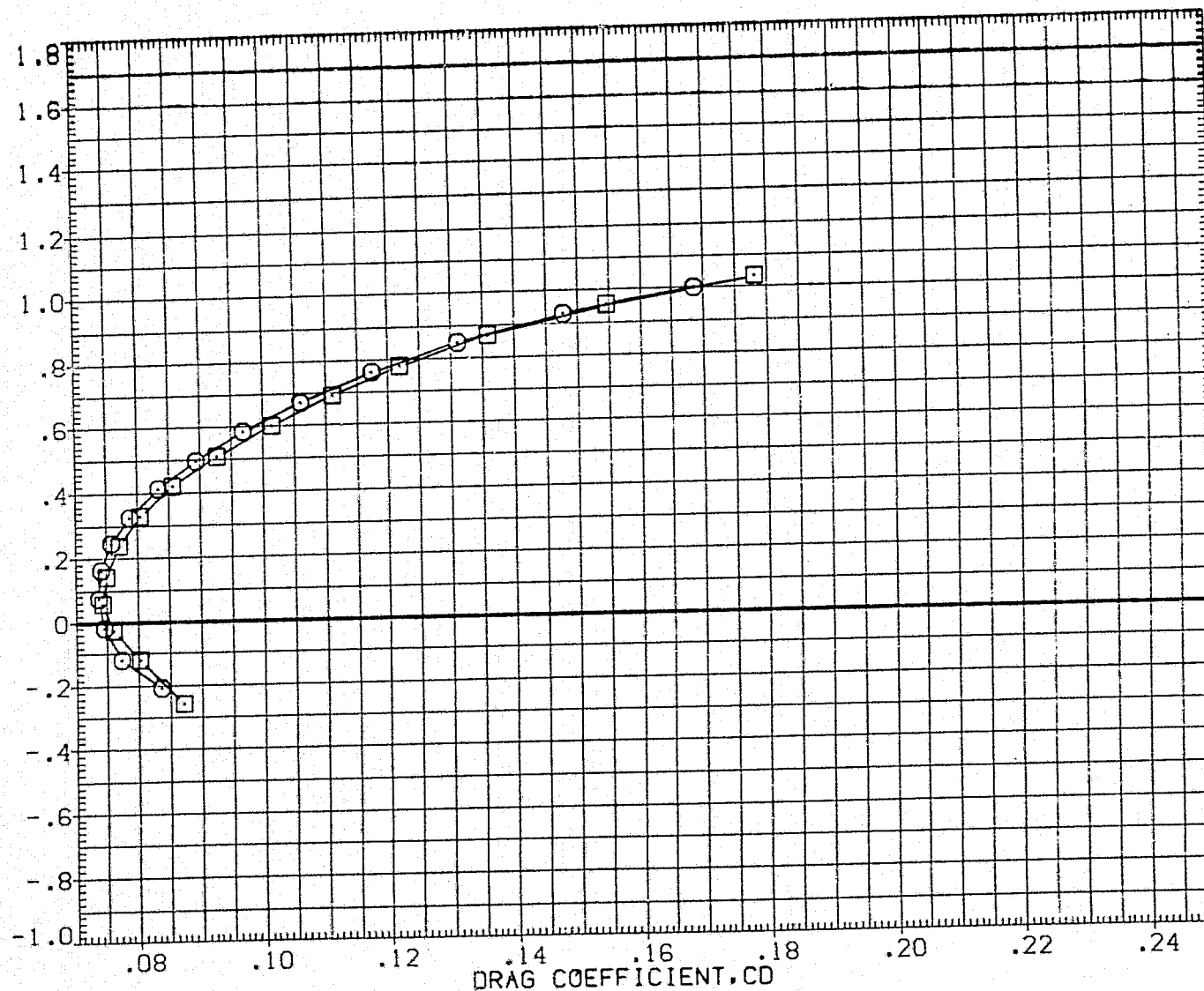


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH  
 (A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION		
(RGM098)	○ CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.2A)		7.850	20.000	SREF	5500.0000	SQ.FT.
(RGM081)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	7.850	20.000	LREF	327.8000	IN.
(RGM084)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	-2.000	7.850	20.000	BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	



FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH

(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION		
(RGM098)	CAS K1 FO V9.1 (PLUS. ORB TCS AT38.2A)		7.850	20.000	SREF	5500.0000	SQ.FT.
(RGM081)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	1.000	7.850	20.000	LREF	327.8000	IN.
(RGM084)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	-2.000	7.850	20.000	BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

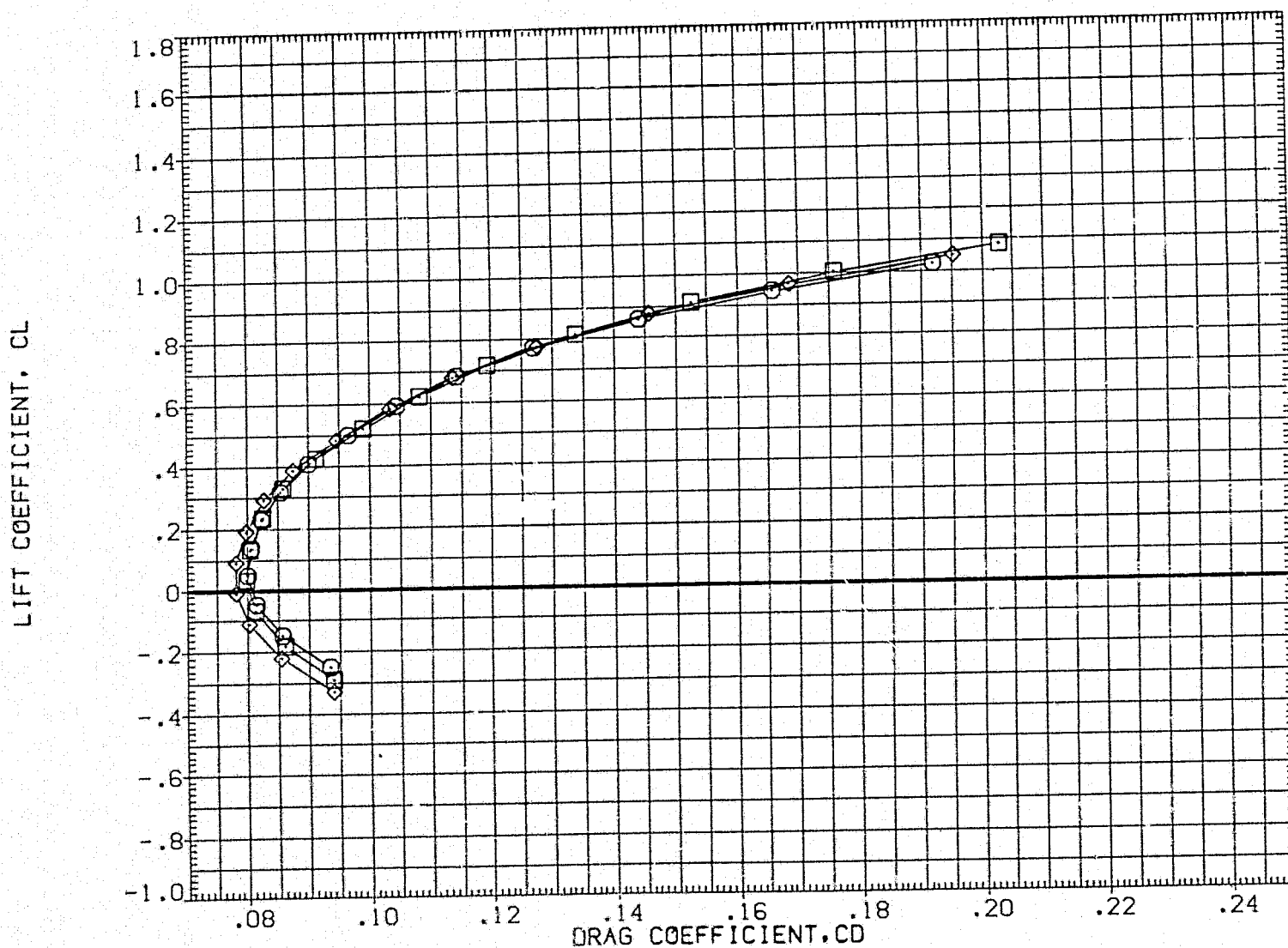


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH  
(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	10RB	S5-6	REFERENCE INFORMATION		
(RGM098)	○ CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.2A)		7.850	20.000	SREF	5500.0000	SG.FT.
(RGM081)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	7.850	20.000	LREF	327.8000	IN.
(RGM084)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	-2.000	7.850	20.000	BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

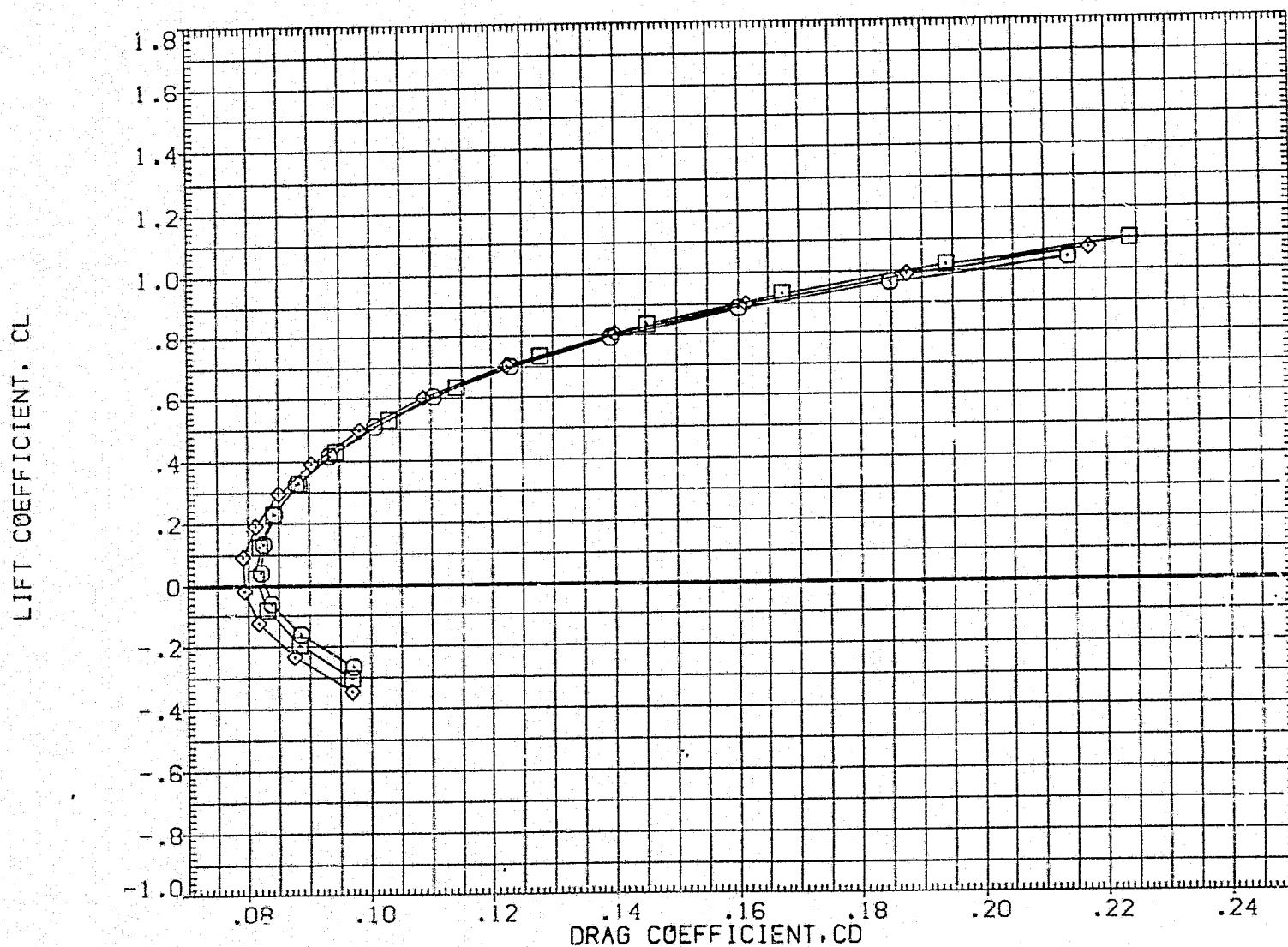


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH  
(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM098)	CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.2A)
(RGM081)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)
(RGM084)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)

STAB	IORB	55-6
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

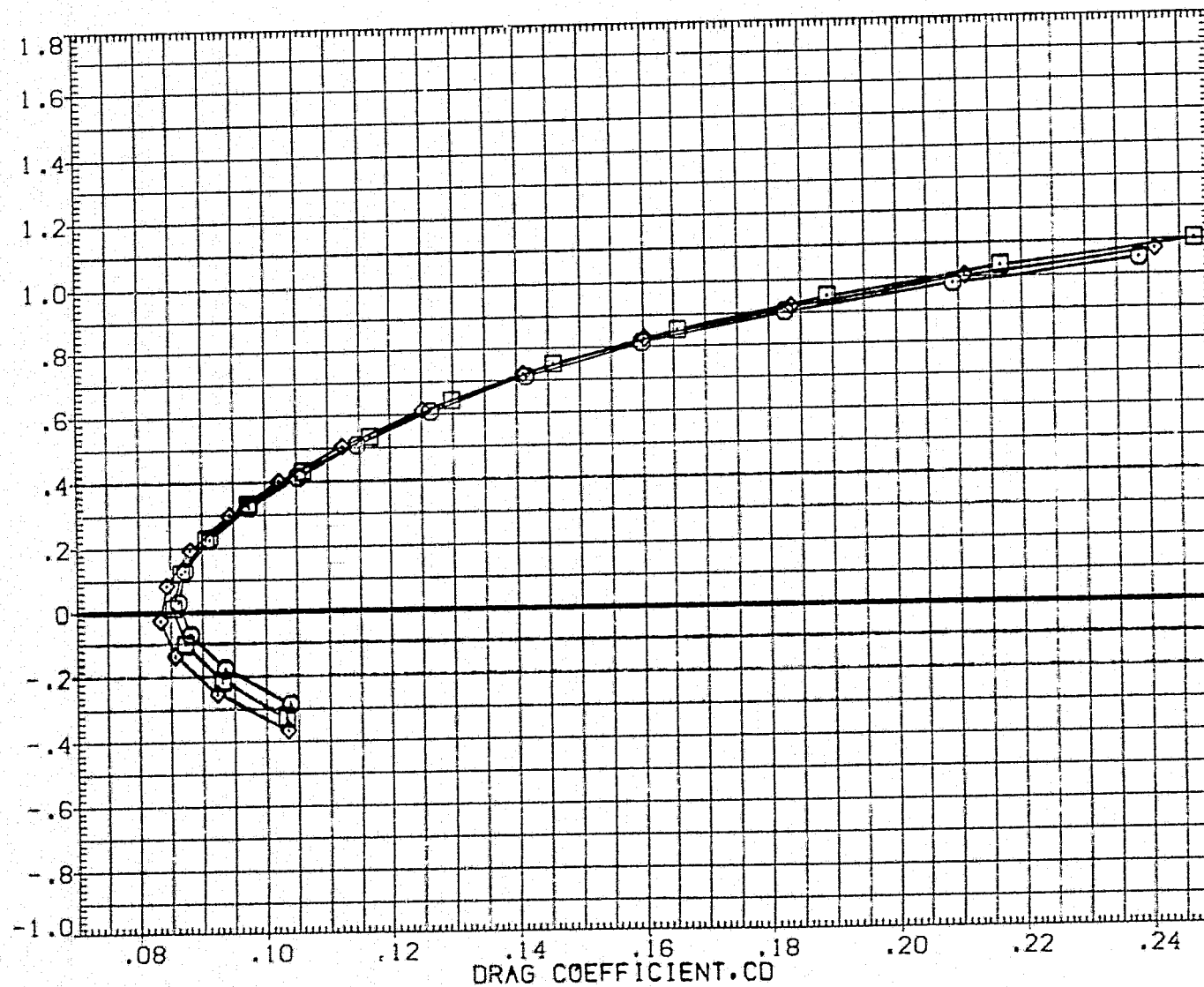


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH  
(E)MACH = .70



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM098)	□ CAS K1 FD V9.1 (PLUS. ORB TC5 AT38.2A)
(RGM081)	□ CAS K1 FD H15.6 V9.1 (PLUS. ORB TC5 AT38.2)
(RGM084)	◇ DATA NOT AVAILABLE

STAB	IORB	S5-6
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

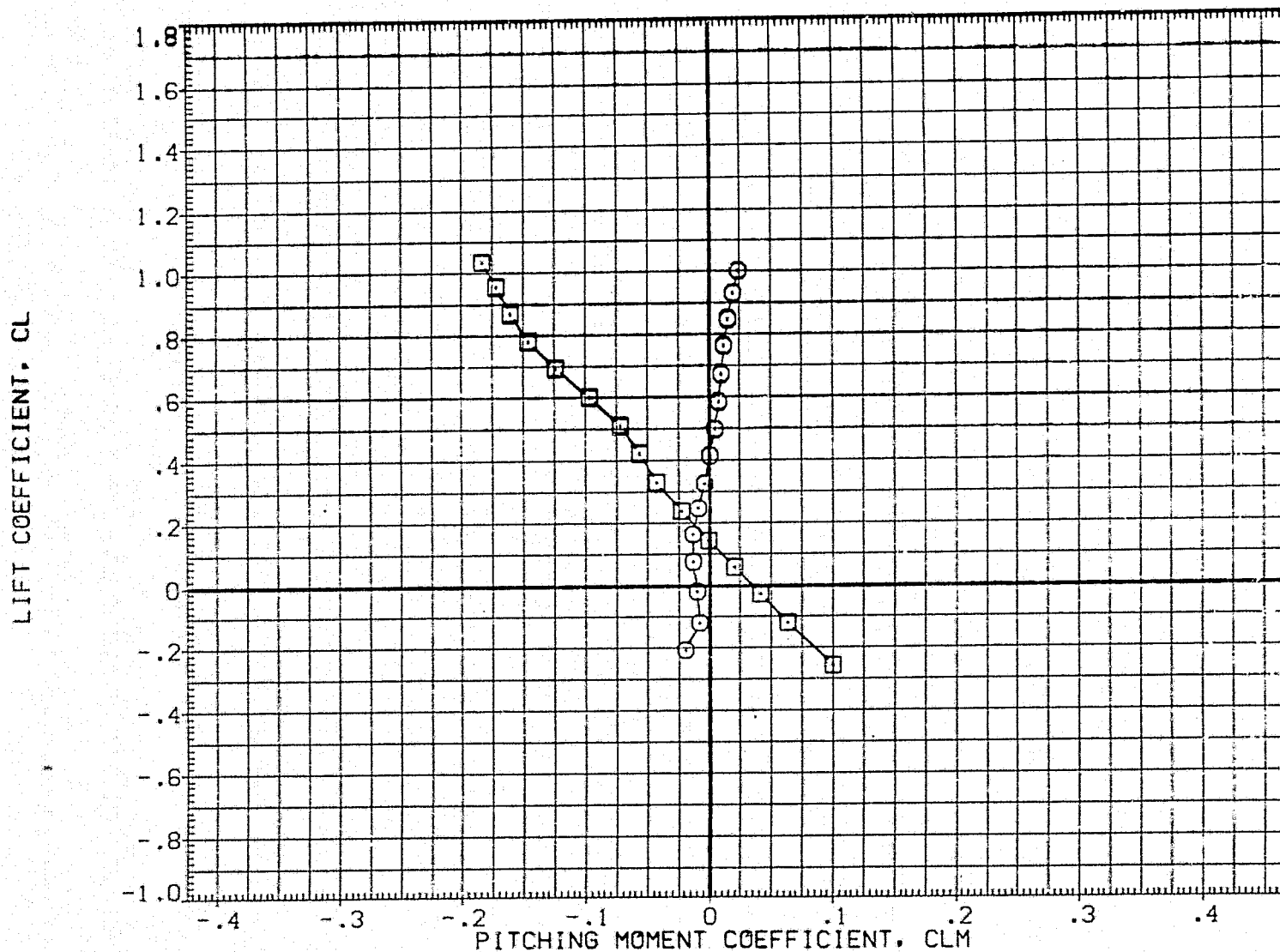


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH

(A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION					
(RGM098)	CAS	K1	FO	VS.1	(PLUS. ORB TCS AT38.2A)	
(RGM081)	CAS	K1	FO	H15.6	VS.1 (PLUS. ORB TCS AT38.2)	
(RGM084)	CAS	K1	FO	H15.6	VS.1 (PLUS. ORB TCS AT38.2)	

STAB	IORB	S5-6
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRF	1339.9100	IN. XC
YMRF	.0000	IN. YC
ZMRF	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

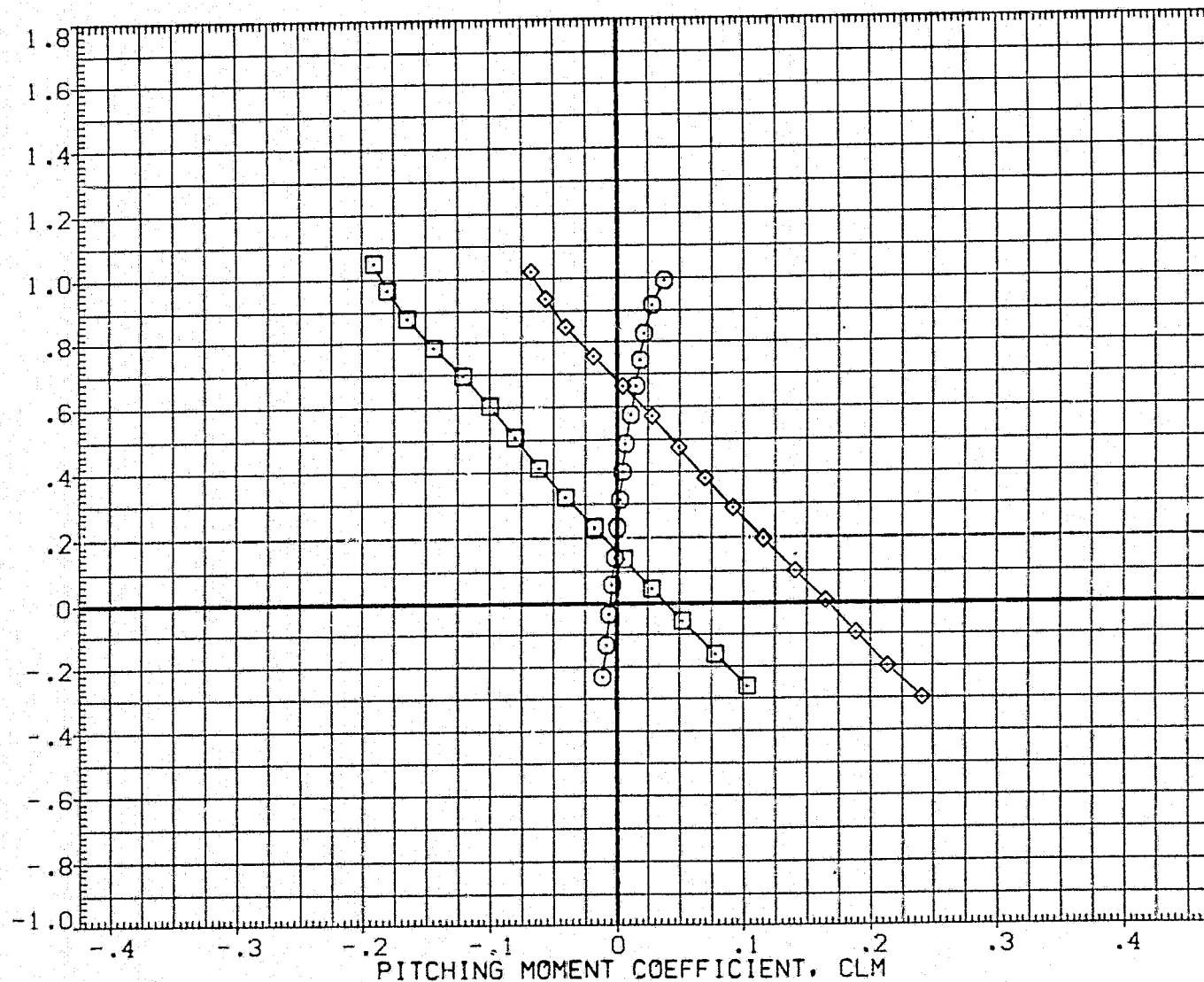


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH  
(B)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM098) ○ CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.2A)  
 (RGM081) □ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)  
 (RGM084) ◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)

STAB

IORB

S5-6

1.000 7.850 20.000  
 -2.000 7.850 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

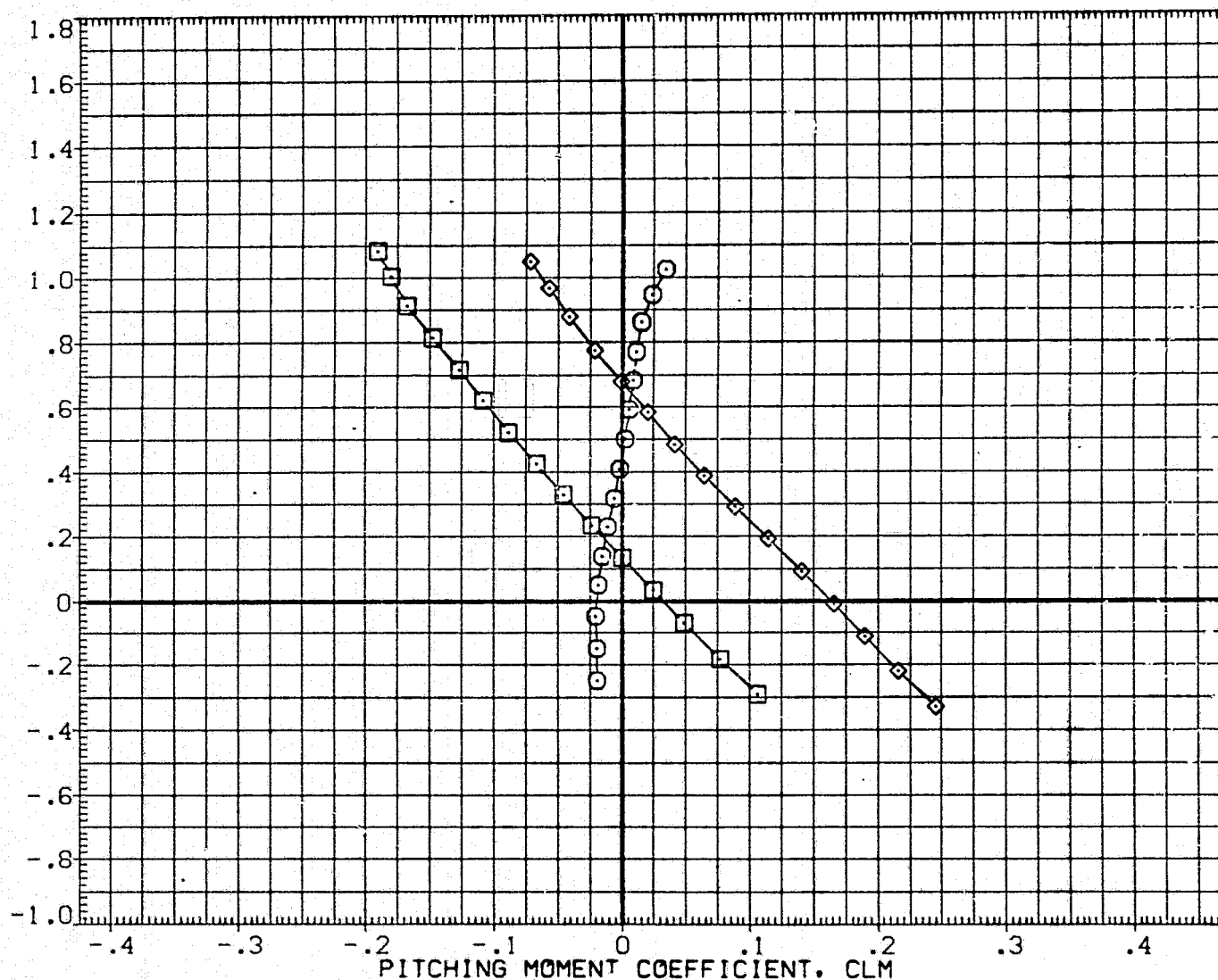


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH

(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION		
(RGM098)	CAS K1 FO V9.1 (PLUS. ORB TCS AT38.2A)		7.850	20.000	SREF	5500.0000	SQ. FT.
(RGM081)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	1.000	7.850	20.000	LREF	327.8000	IN.
(RGM084)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	-2.000	7.850	20.000	BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

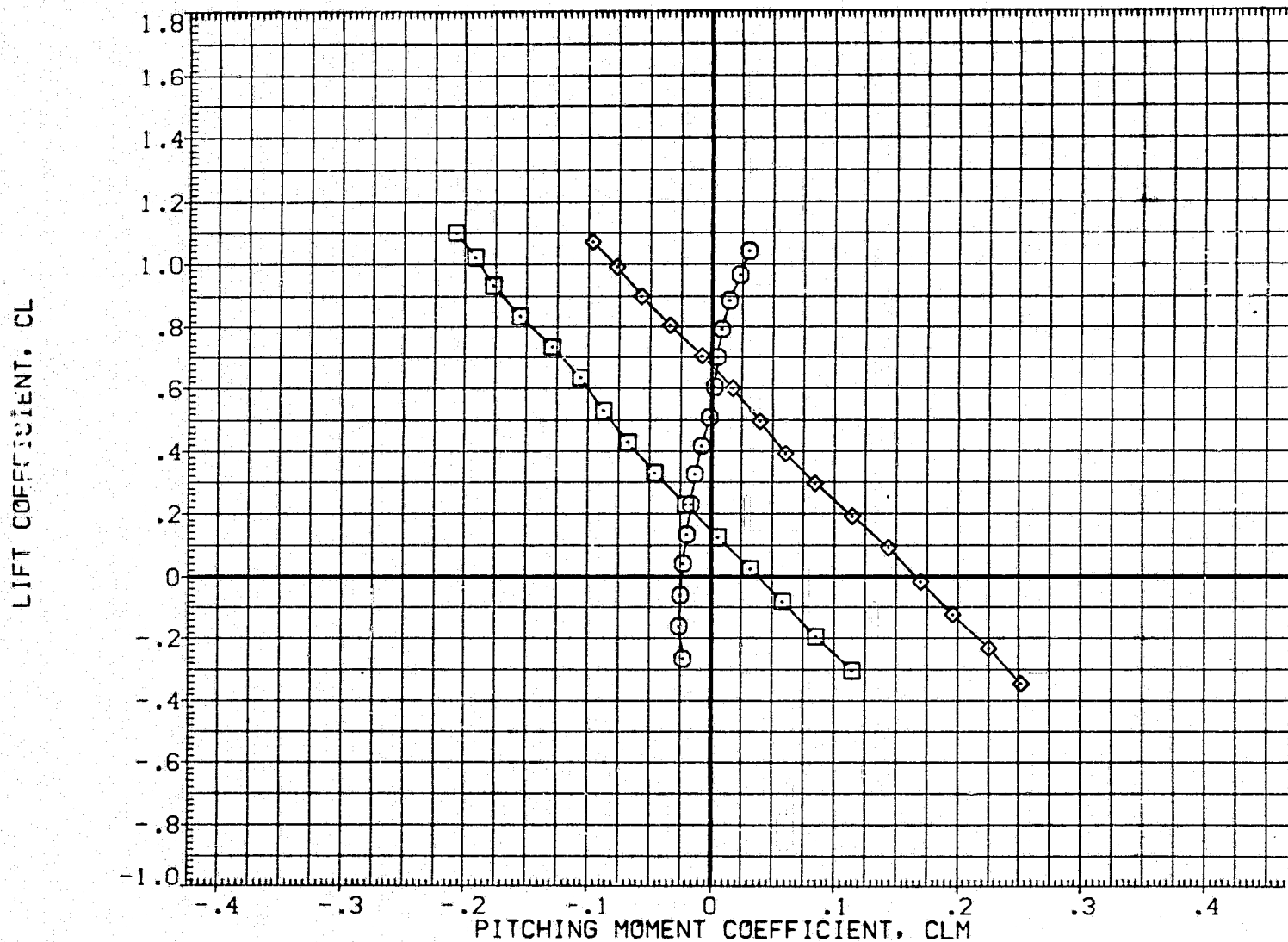


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH

(D)MATH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM098)	CAS KI FO V9.1 (PLUS. ORB TCS AT38.2A)
(RGM081)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)
(RGM084)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)

STAB	IORB	S5-6
	7.850	20.000
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XM RP	1339.9100	IN. XC
YM RP	.0000	IN. YC
ZM RP	190.7500	IN. ZC
SCALE	.0300	

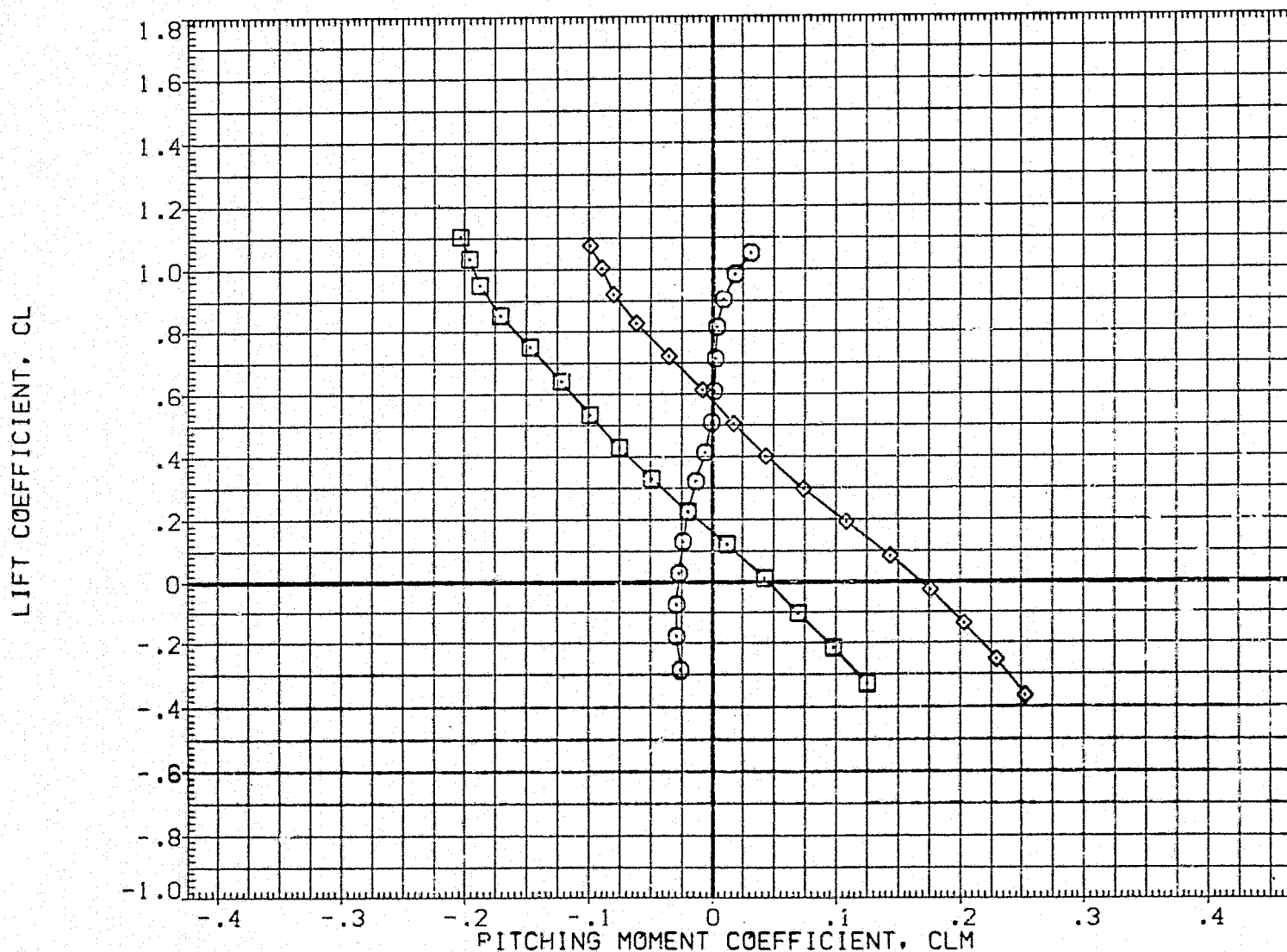


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH  
(E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM098)	CA5 K1 FO V9.1 (PLUS. ORB TCS AT38.2A)
(RGM081)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)
(RGM084)	DATA NOT AVAILABLE

STAB	IORB	S5-6
	7.850	20.000
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	50. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHAW, DEG.

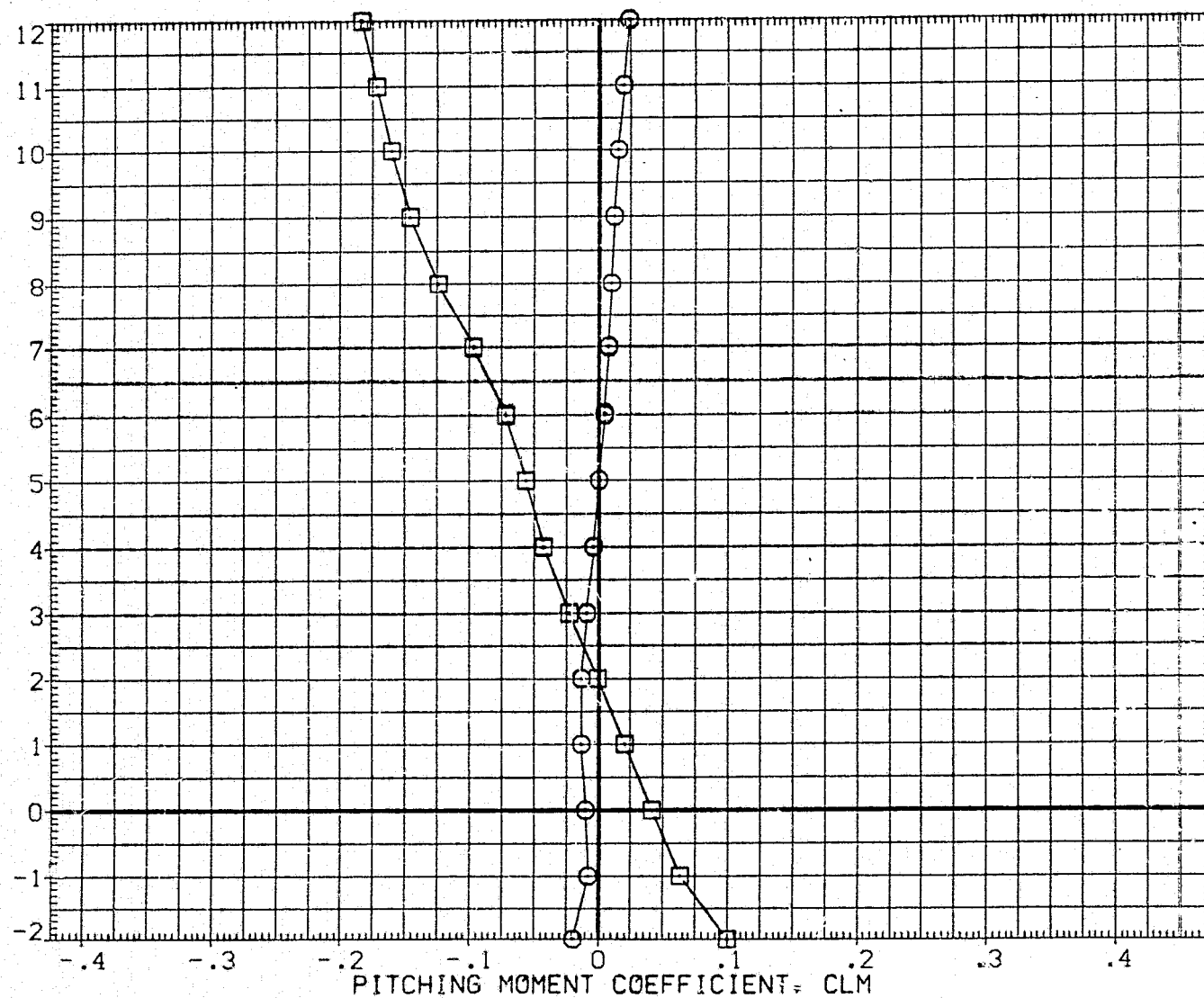


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH

(A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION		
(RGM098)	○ CAS K1 FO V9.1 (PLUS. ORB TCS AT38.2A)	1.000	7.850	20.000	SREF	5500.0000	SQ.FT.
(RGM081)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	-2.000	7.850	20.000	LREF	327.8000	IN.
(RGM084)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)				BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

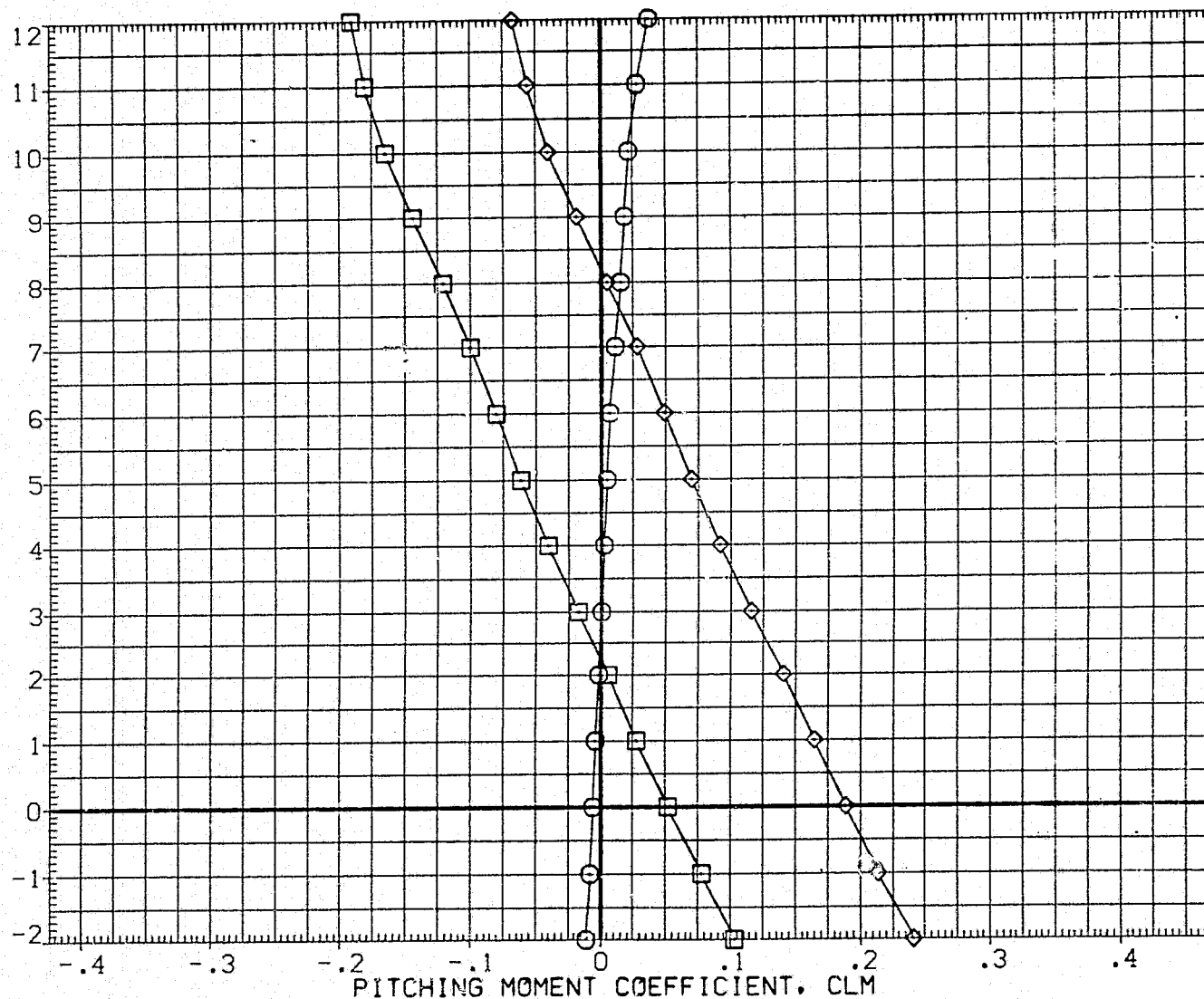


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH

(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMC98)	CA5 K1 FO V9.1 (PLUS. ORB TC5 AT38.2A)
(RGMO81)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)
(RGMO84)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)

STAB	ICRB	S5-6
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

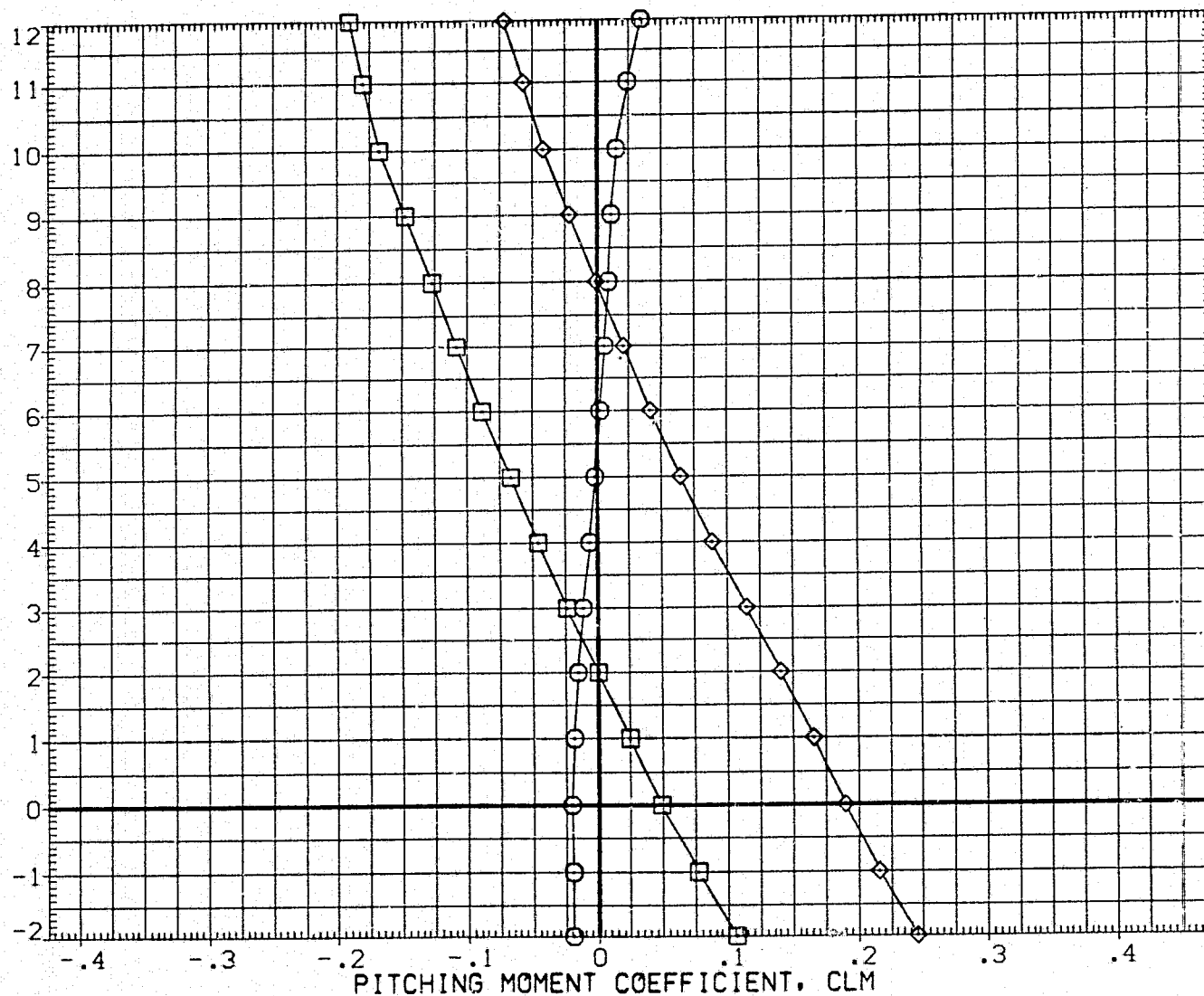


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH  
(C)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	!ORB	S5-6	REFERENCE INFORMATION	
(RGM098)	CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.2A)		7.850	20.000	SREF	5500.0000 SQ.FT.
(RGM081)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	7.850	20.000	LREF	327.8000 IN.
(RGM084)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	-2.000	7.850	20.000	BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

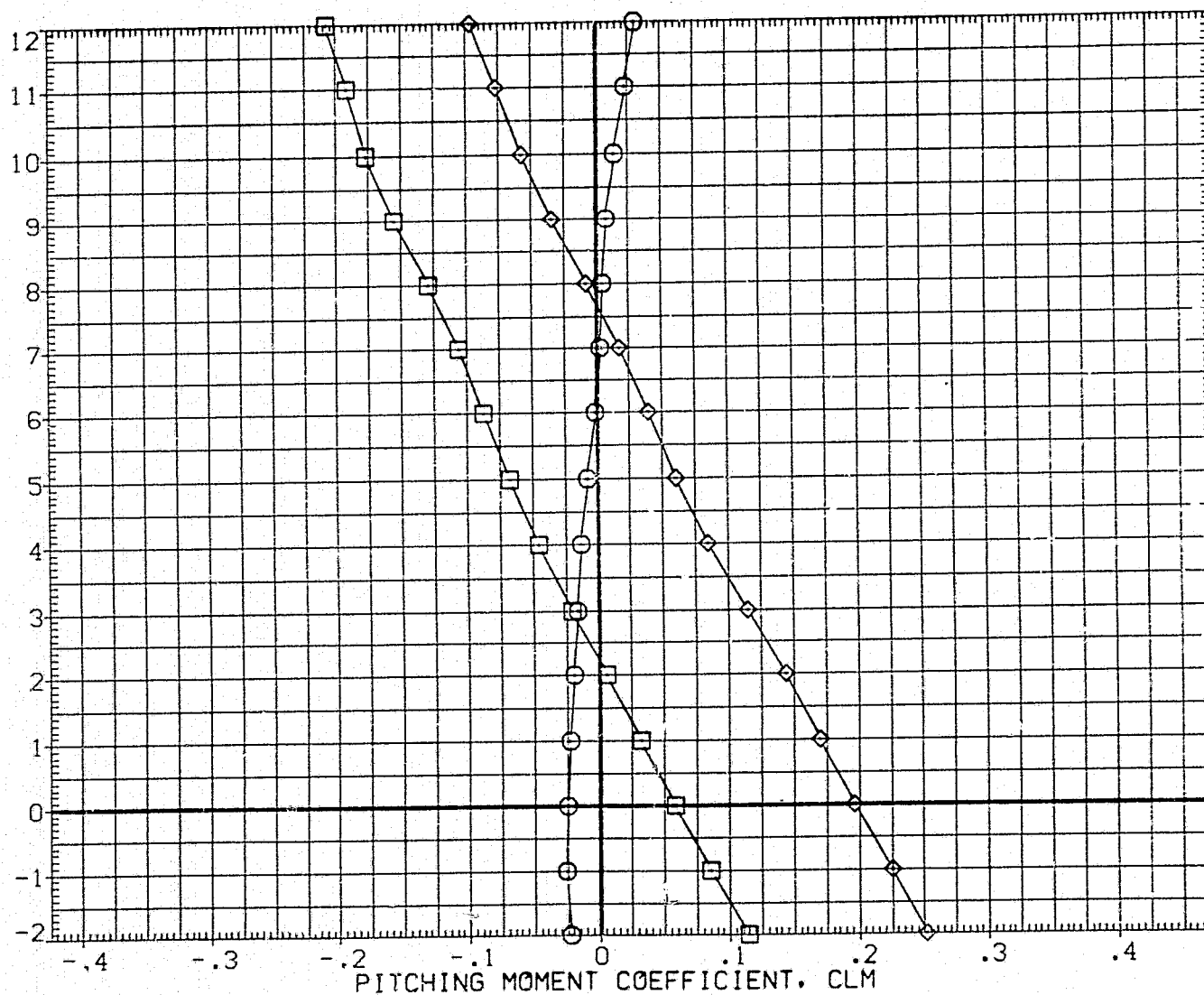


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH  
(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION
(RGM098)	CAS K1 FC V9.1 (PLUS. ORB TCS AT38.2A)		7.850	20.000	SREF 5500.0000 SQ.FT.
(RGM081)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	1.000	7.850	20.000	LREF 327.8000 IN.
(RGM084)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	-2.000	7.850	20.000	BREF 2348.0000 IN.
					XMRP 1339.9100 IN. XC
					YMRP .0000 IN. YC
					ZMRP 190.7500 IN. ZC
					SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

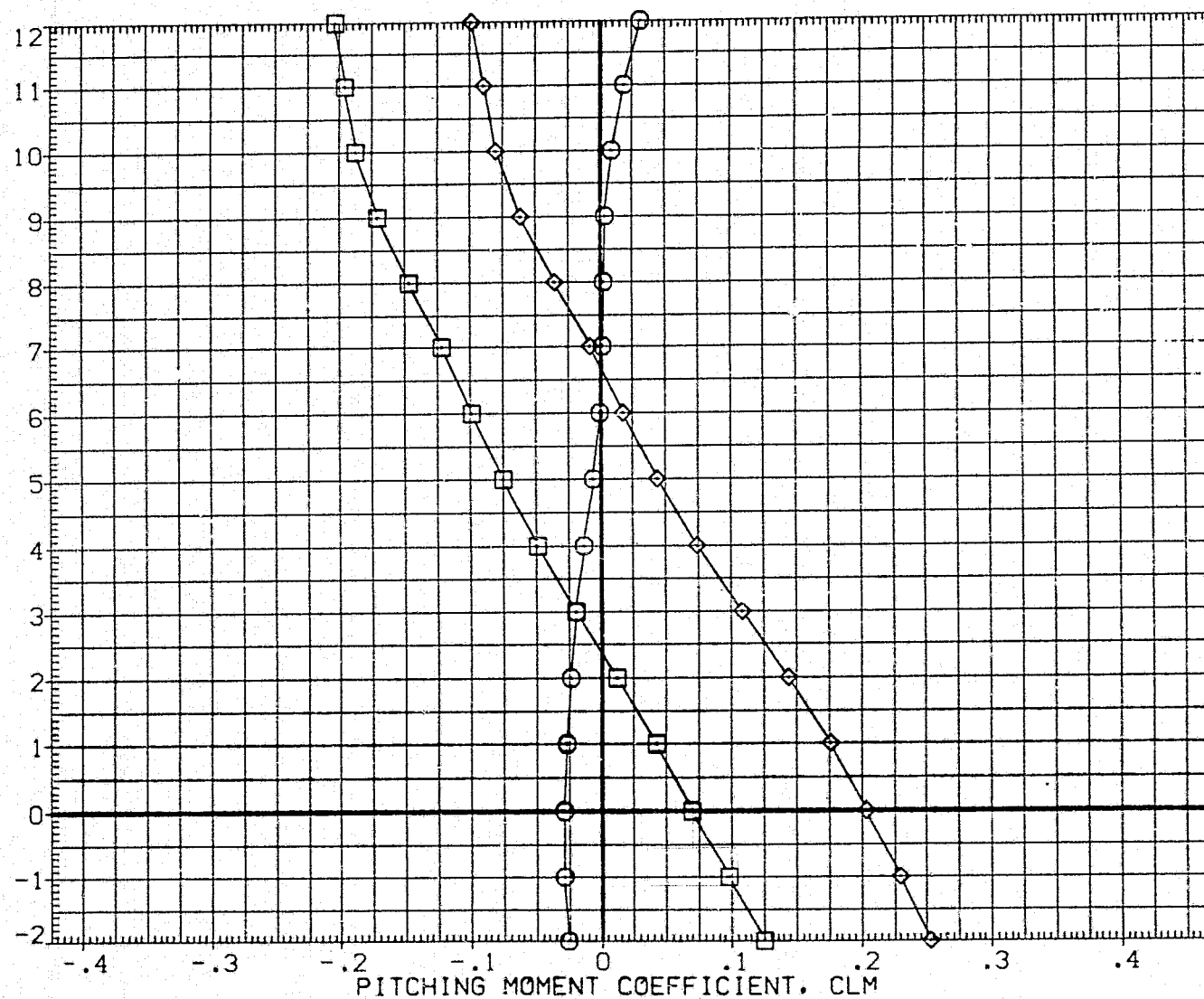


FIG. 230 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH  
(E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION	
(RGM107)	CA5 KI FO V9.1 (PLUS. ORB TC5 AT38.3)	1.000	4.000	.000	SREF	5500.0000 SQ.FT.
(RGM116)	DATA NOT AVAILABLE				LREF	327.8000 IN.
(RGM117)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	4.000	.000	BREF	2348.0000 IN.
(RGM112)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	-3.200	4.000	.000	XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

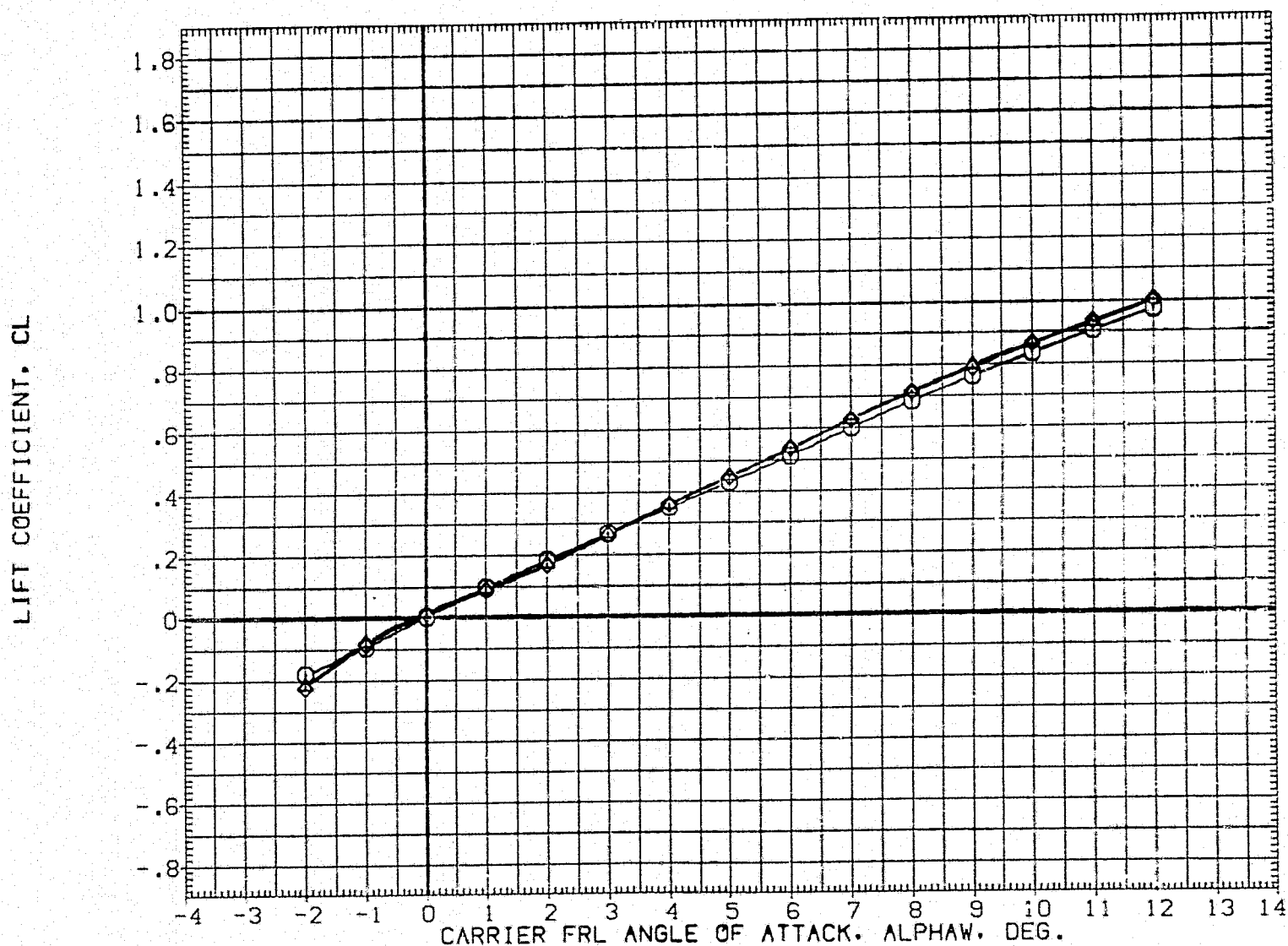


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION
(RGM107)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	1.000	4.000	.000	SREF 5500.0000 SQ.FT.
(RGM116)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	4.000	.000	LREF 327.8000 IN.
(RGM117)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-3.200	4.000	.000	BREF 2348.0000 IN.
(RGM112)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )				XMRP 1339.9100 IN. XC
					YMRP .0000 IN. YC
					ZMRP 190.7500 IN. ZC
					SCALE .0300

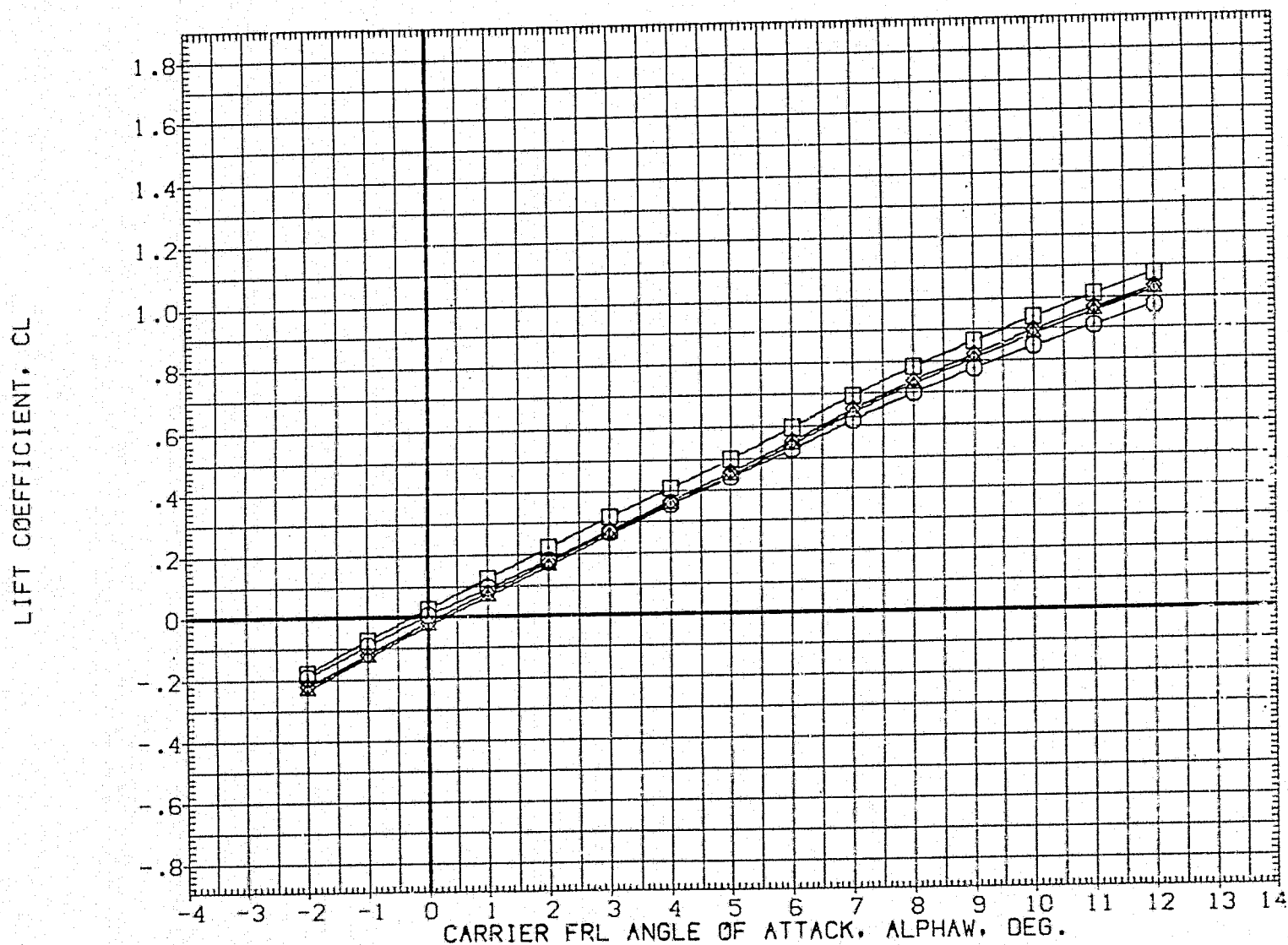


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM107)	CAS K1 FO V9.1 (PLUS. ORB TCS AT38.3 )
(RGM116)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )
(RGM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )
(RSM112)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )

STAB	IORB	SS-6
1.000	4.000	.000
-2.000	4.000	.000
-3.200	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

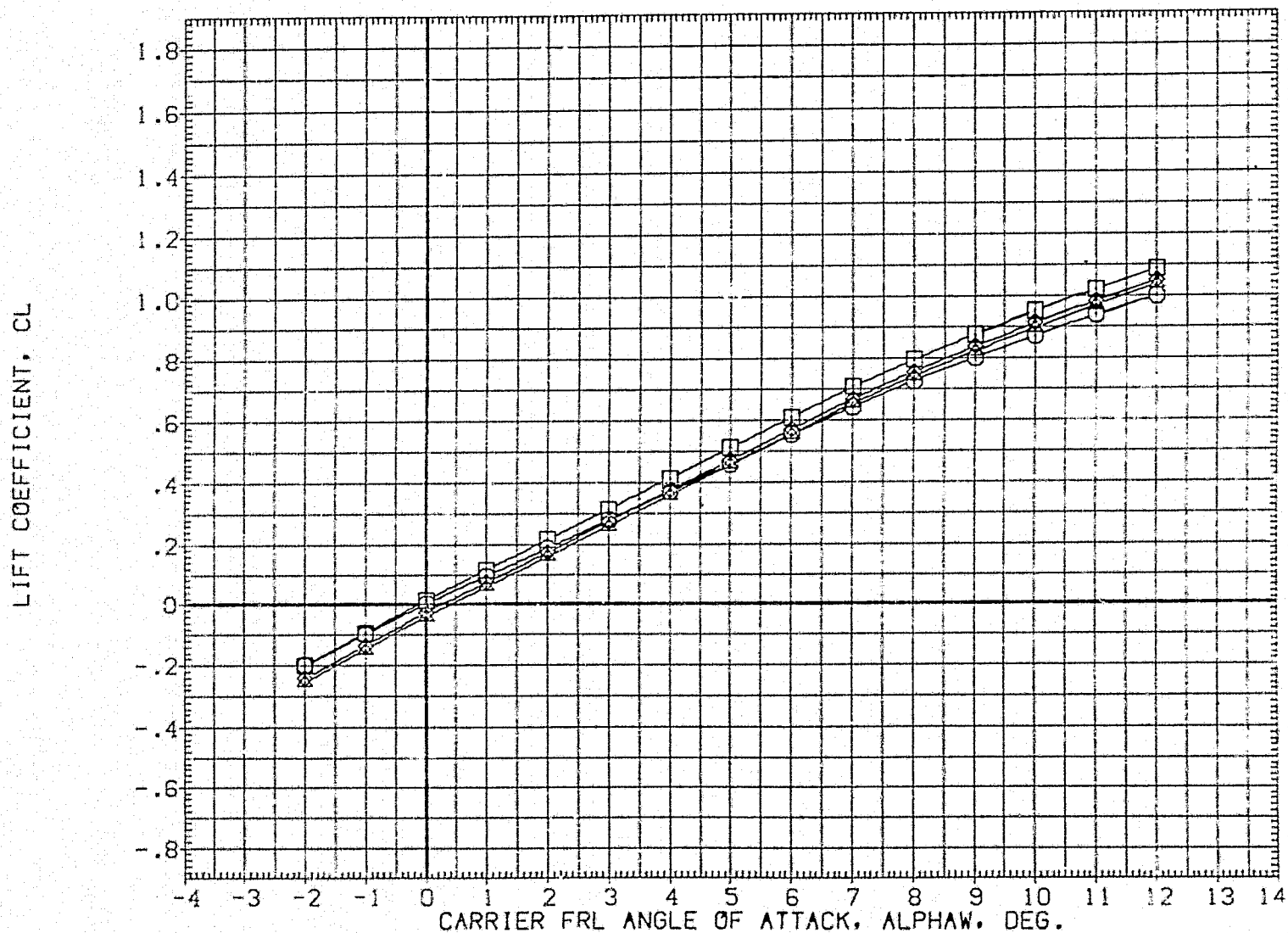


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION
(RGM107)	CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.3 )		4.000	.000	SREF 5500.0000 SQ.FT.
(RGM116)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	1.000	4.000	.000	LREF 327.8000 IN.
(RGM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	4.000	.000	BREF 2348.0000 IN.
(RGM112)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-3.200	4.000	.000	XMRP 1339.9100 IN. XC
					YMRP .0000 IN. YC
					ZMRP 190.7500 IN. ZC
					SCALE .0300

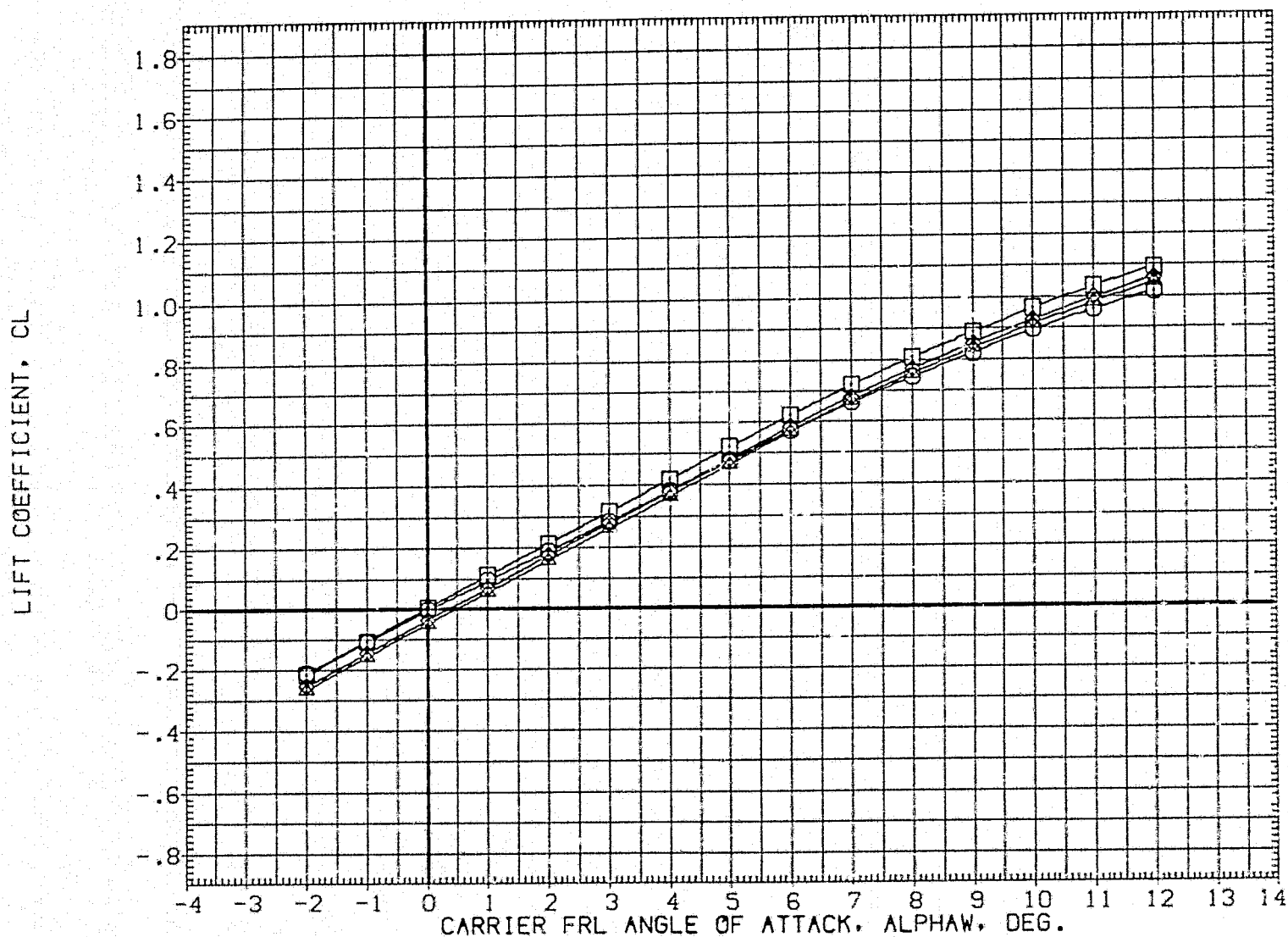


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION		
(RGM107)	CAS KI FO V9.1 (PLUS. ORB TCS AT38.3 )		4.000	.000	SREF	5500.0000	SQ.FT.
(RGM116)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	1.000	4.000	.000	LREF	327.8000	IN.
(RGM117)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	4.000	.000	BREF	2348.0000	IN.
(RGM112)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-3.200	4.000	.000	XMRP	1339.9100	IN. YC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

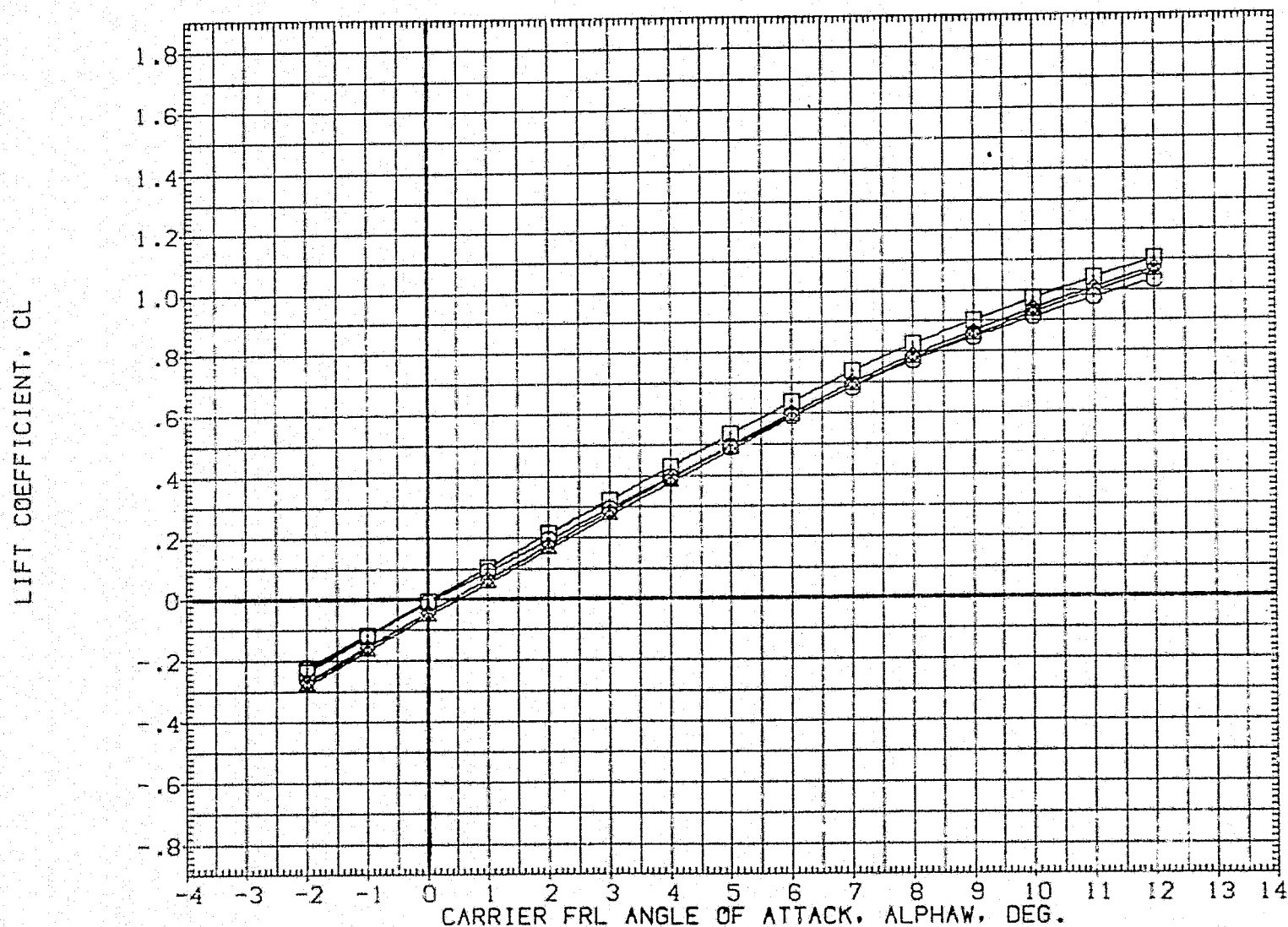


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION		
(RGM107)	○ CAS K1 FO V9.1 (PLUS. ORB TCS AT38.3 )		4.000	.000	SREF	5500.0000	SQ.FT.
(RGM116)	□ DATA NOT AVAILABLE	1.000	4.000	.000	LREF	327.8000	IN.
(RGM117)	△ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	4.000	.000	BREF	2348.0000	IN.
(RGM112)	× CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-3.200	4.000	.000	XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

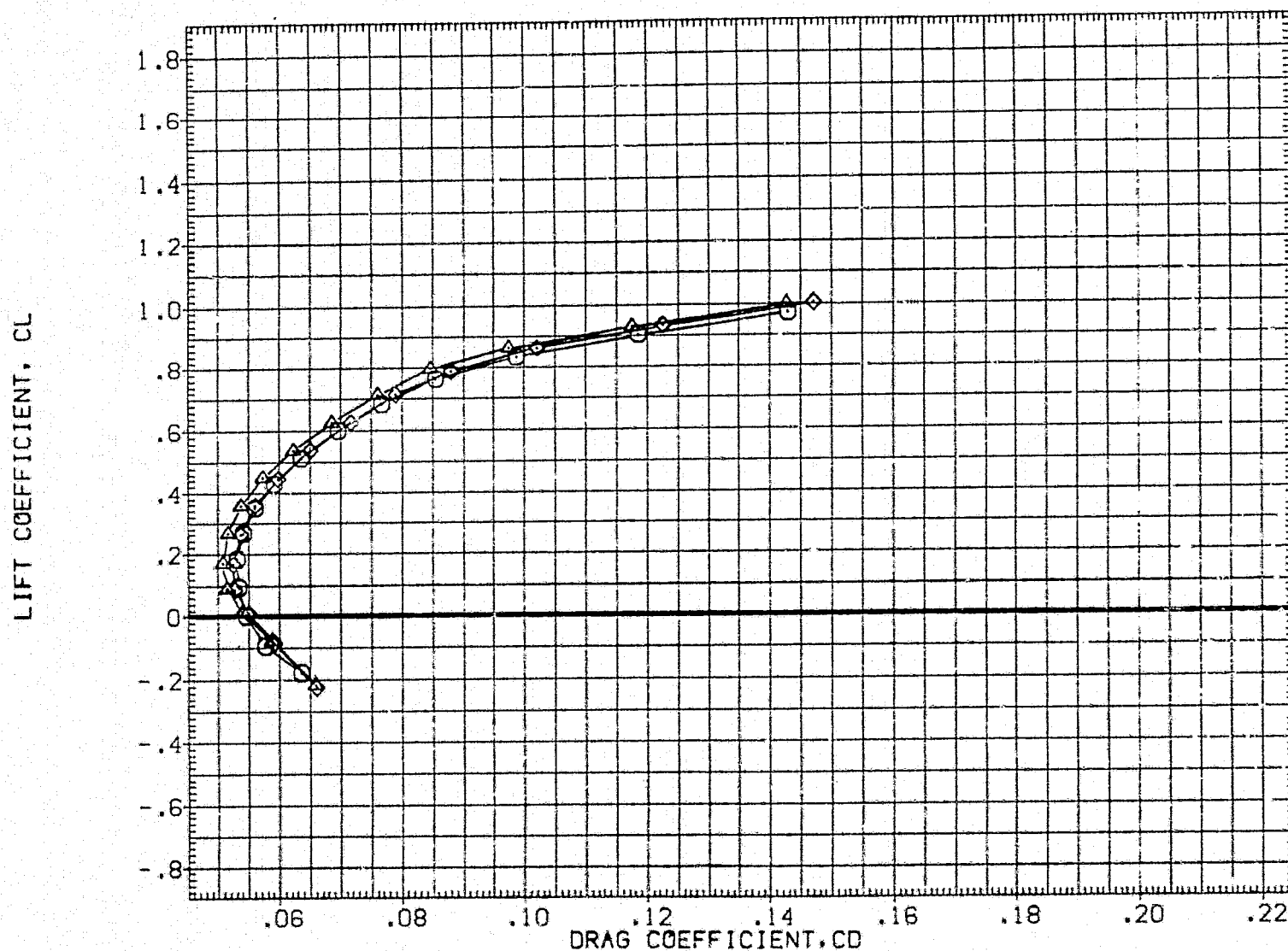


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(A)MACH = .15



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM107)	○	CAS	K1	FO	V9.1	(PLUS. ORB TC5 AT38.3 )
(RGM116)	□	CAS	K1	FO	H15.6	V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM117)	△	CAS	K1	FO	H15.6	V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM112)	△	CAS	K1	FO	H15.6	V9.1 (PLUS. ORB TC5 AT38.3 )

STAB

IORB

S5-6

REFERENCE INFORMATION

SREF	5500.0000	SQ. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

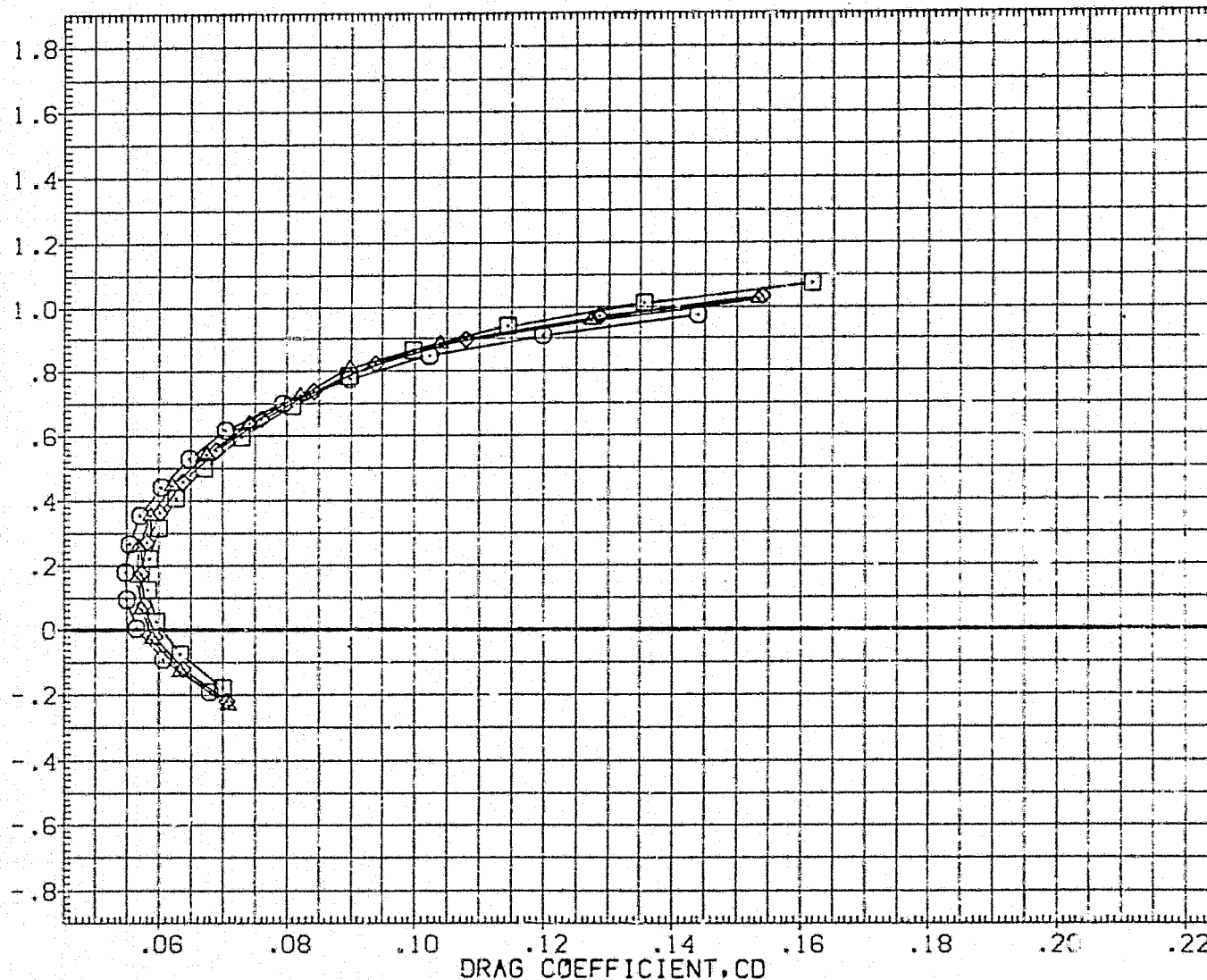


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ICRB	S5-6	REFERENCE INFORMATION		
(RGM107)	CAS K1 FO V9.1 (PLUS. ORB TCS AT38.3 )		4.000	.000	SREF	5500.0000	SQ.FT.
(RGM116)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	1.000	4.000	.000	LREF	327.8000	IN.
(RGM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	4.000	.000	BREF	2348.0000	IN.
(RGM112)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-3.200	4.000	.000	XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

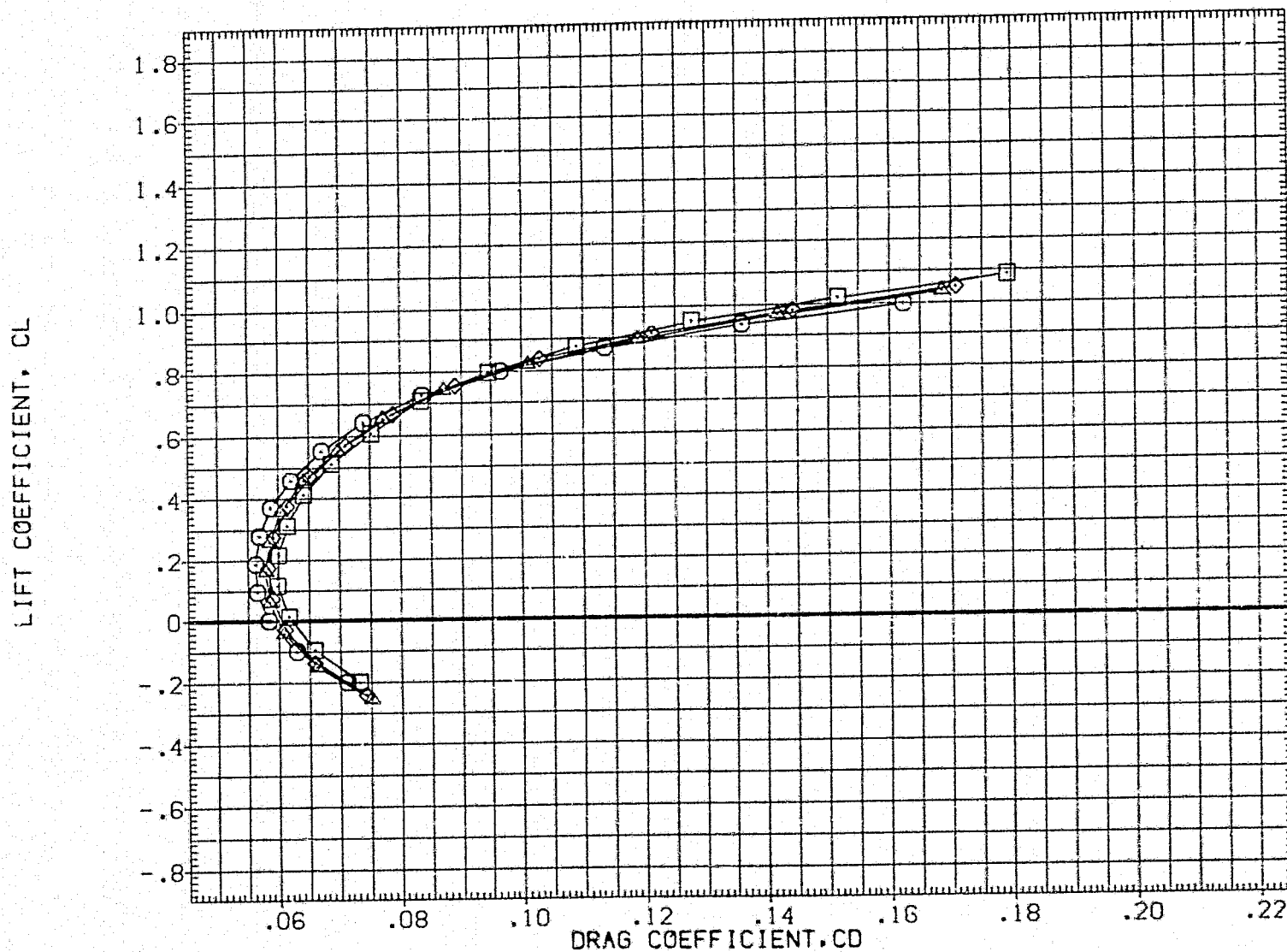


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY  
(C)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM107)	○	CAS	K1	FO	V9.1	(PLUS. ORB TCS AT38.3 )
(RGM116)	□	CAS	K1	FO	H15.6	V9.1 (PLUS. ORB TCS AT38.3 )
(RGM117)	◇	CAS	K1	FO	H15.6	V9.1 (PLUS. ORB TCS AT38.3 )
(RGM112)	△	CAS	K1	FO	H15.6	V9.1 (PLUS. ORB TCS AT38.3 )

STAB

IORB

S5-6

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
YMRP	1339.9100	IN. XC
ZMRP	190.7500	IN. YC
SCALE	.0300	IN. ZC

LIFT COEFFICIENT, CL

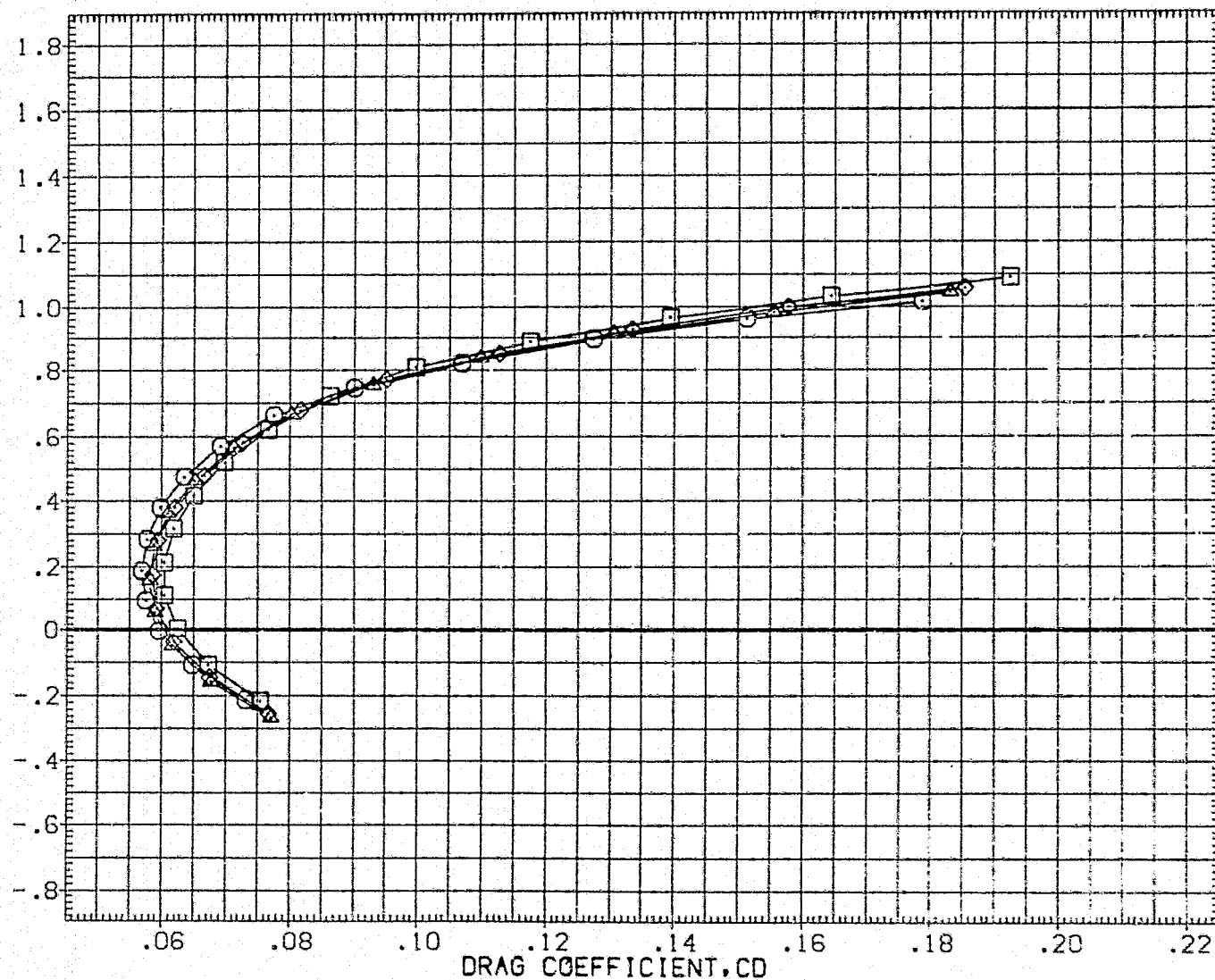


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(D)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM107) □ CA5 K1 FO V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM116) □ CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM117) △ CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM112) △ CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )

STAB 10RB S5-6  
 1.000 4.000 .000  
 -2.000 4.000 .000  
 -3.200 4.000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

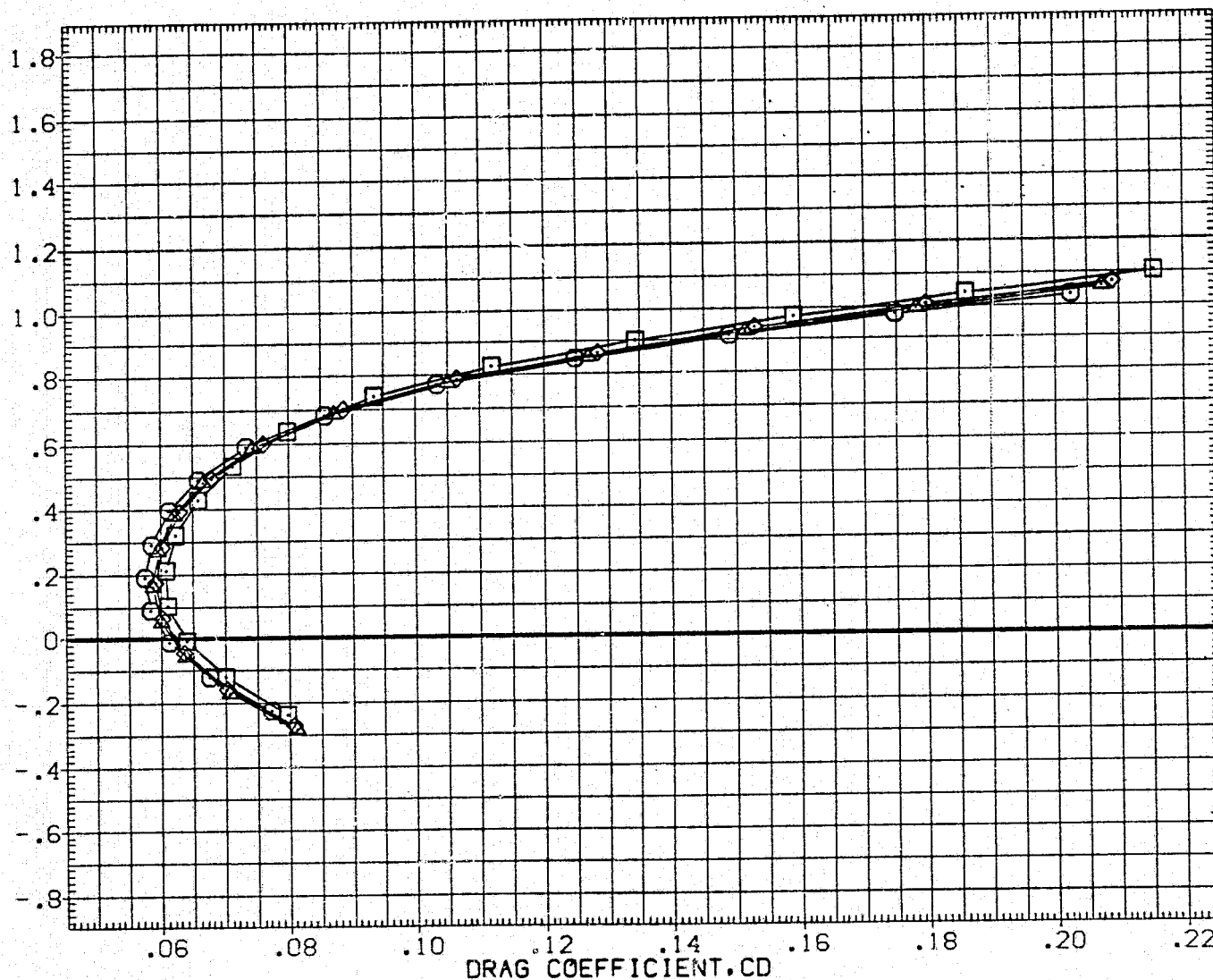


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(E)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(RGM107)	CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.3 )	1.000	4.000	.000
(RGM116)	DATA NOT AVAILABLE	-2.000	4.000	.000
(RGM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-3.200	4.000	.000
(RSM112)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-3.200	4.000	.000

REFERENCE INFORMATION

SREF	5500.0000	50. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

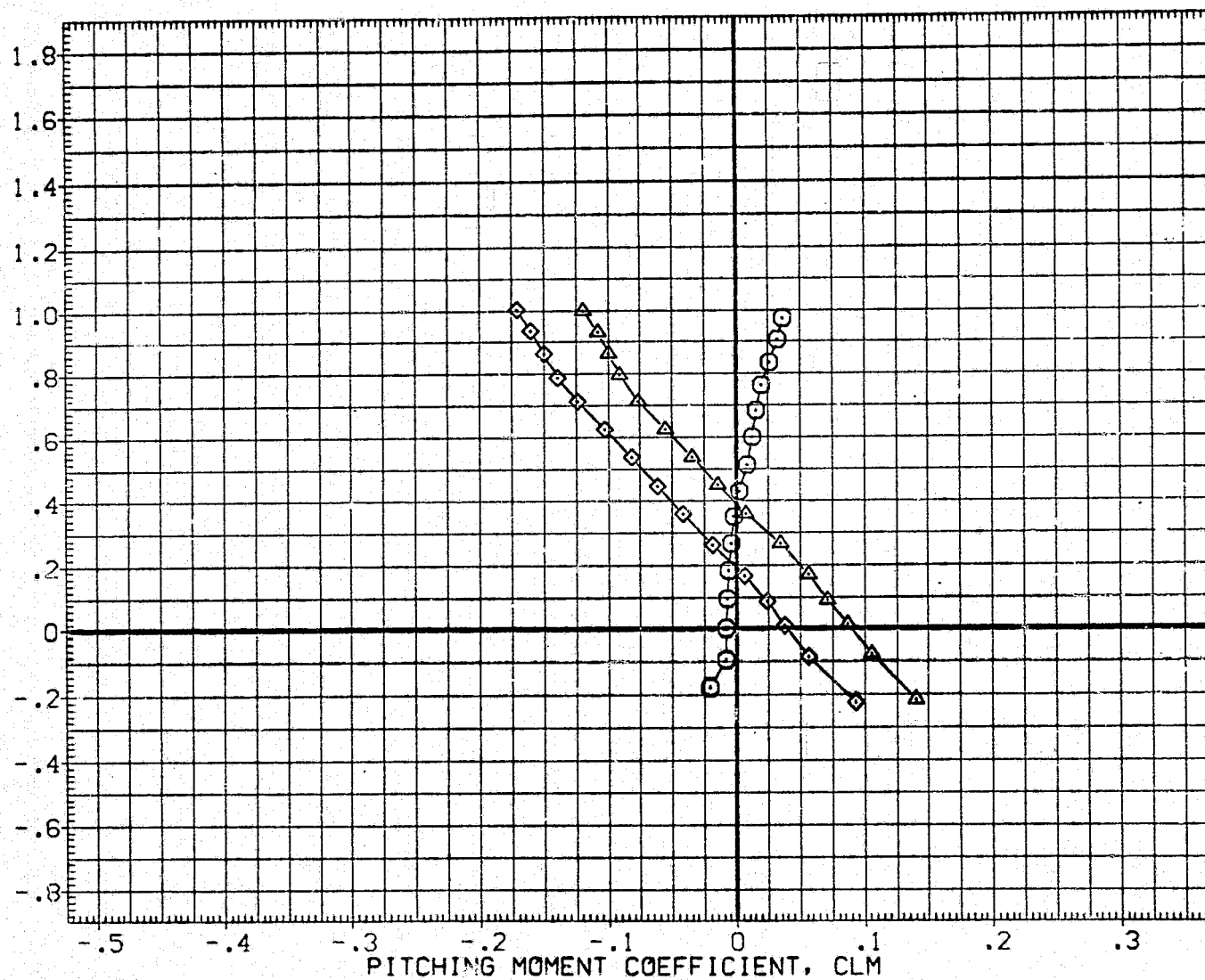


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ICRB	S5-6	REFERENCE INFORMATION
(RGM107)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	1.000	4.000	.000	SREF 5500.0000 SQ.FT.
(RGM116)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-1.000	4.000	.000	LREF 327.8000 IN.
(RGM117)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	4.000	.000	BREF 2348.0000 IN.
(RGM112)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-3.200	4.000	.000	XMRP 1339.9100 IN. XC
					YMRP .0000 IN. YC
					ZMRP 190.7500 IN. ZC
					SCALE .0300

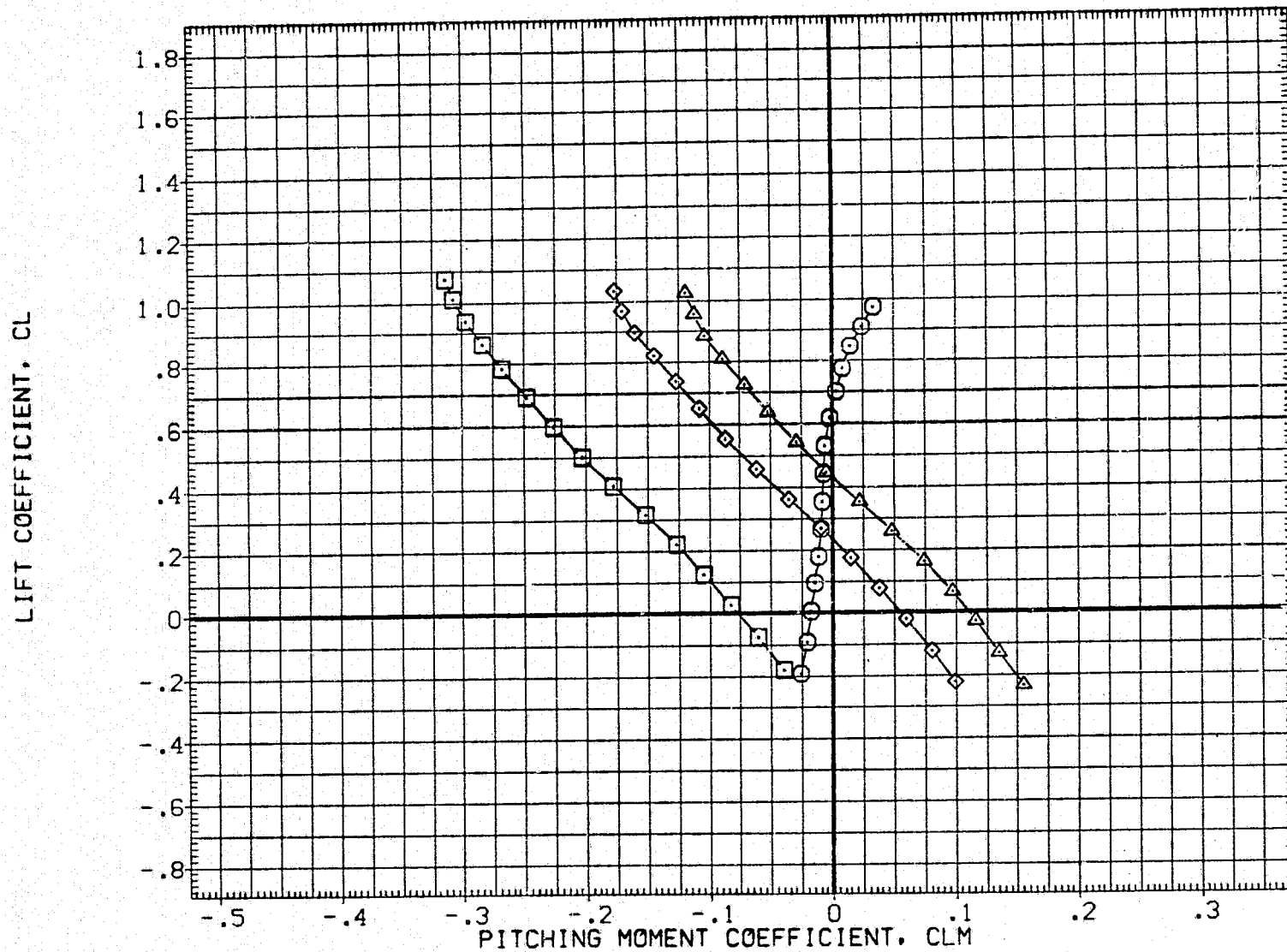


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY  
(B)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM107)	□	CAS	KI	FO	V9.1	(PLUS. ORB TC5 AT38.3 )
(RGM116)	□	CAS	KI	FO	H15.6	V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM117)	◇	CAS	KI	FO	H15.6	V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM112)	△	CAS	KI	FO	H15.6	V9.1 (PLUS. ORB TC5 AT38.3 )

STAB	IORB	SS-6
1.000	4.000	.000
-2.000	4.000	.000
-3.200	4.000	.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

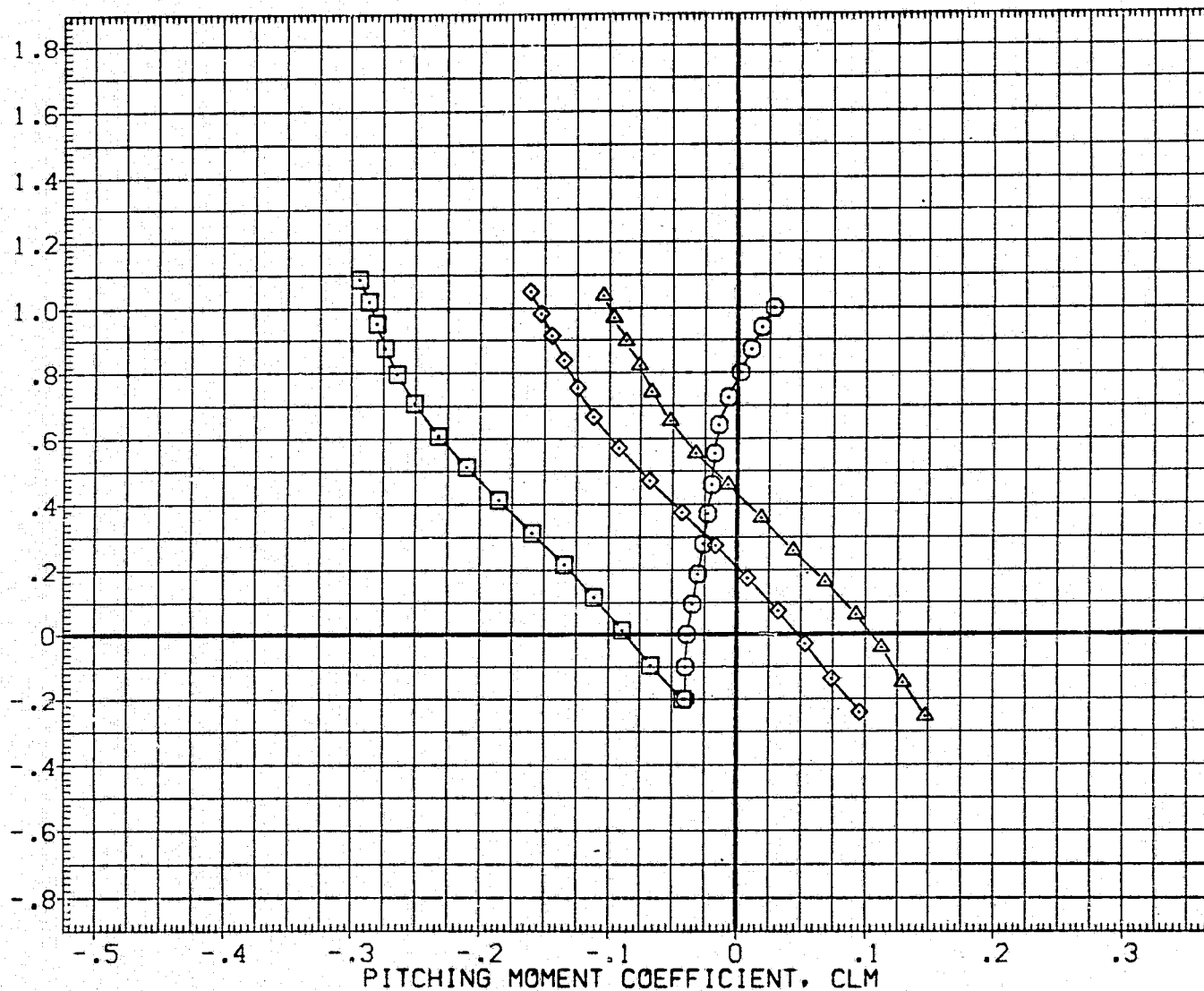


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION
(RSM107)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	1.000	4.000	.000	SREF 5500.0000 SQ.FT.
(RSM116)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	4.000	.000	LREF 327.8000 IN.
(RSM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-3.200	4.000	.000	BREF 2348.0000 IN.
(RSM112)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )				XMRP 1339.9100 IN. XC
					YMRP .0000 IN. YC
					ZMRP 190.7500 IN. ZC
					SCALE .0300

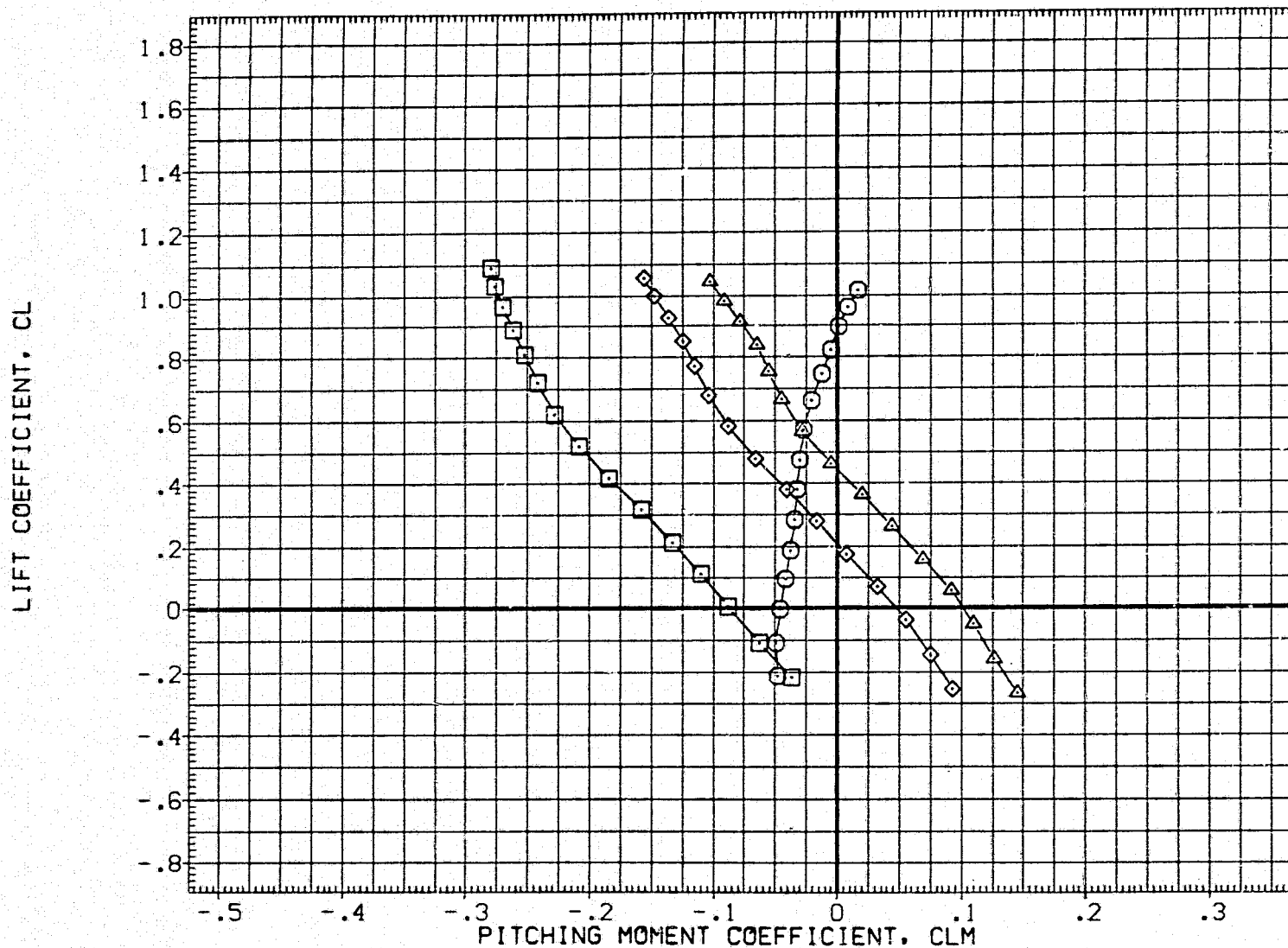


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(D)MACH = .60



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION		
(RGM107)	CA5 K1 FO V9.1 (PLUS. ORB TC5 AT38.3 )		4.000	.000	SREF	5500.0000	SQ.FT.
(RGM116)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	1.000	4.000	.000	LREF	327.8000	IN.
(RGM117)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	4.000	.000	BREF	2348.0000	IN.
(RGM112)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-3.200	4.000	.000	XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

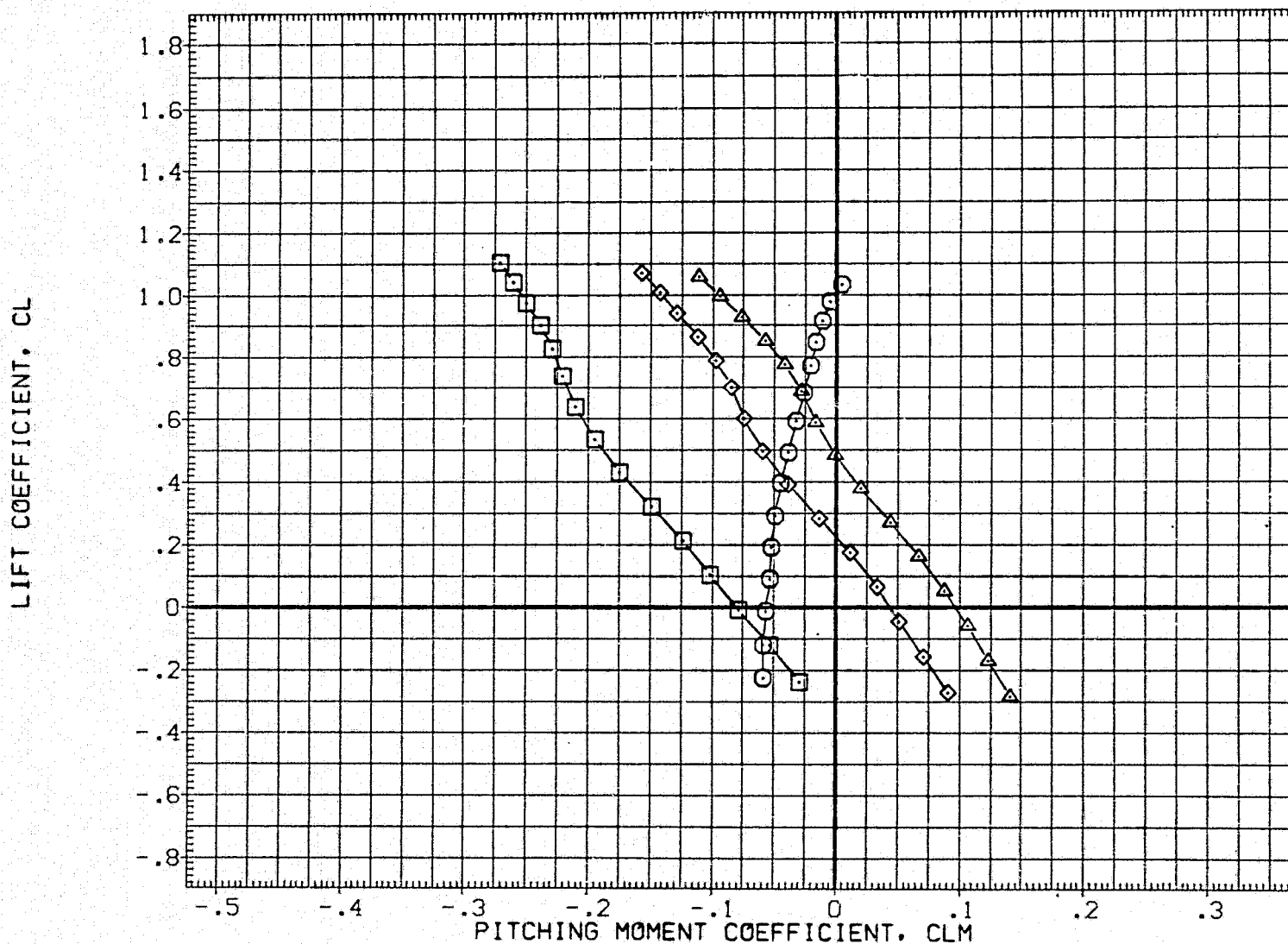


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ICRB	S5-6	REFERENCE INFORMATION		
(RGM107)	CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.3 )		4.000	.000	SREF	5500.0000	50. FT.
(RGM116)	DATA NOT AVAILABLE	1.000	4.000	.000	LREF	327.8000	IN.
(RGM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	4.000	.000	BREF	2348.0000	IN.
(RSM112)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-3.200	4.000	.000	XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

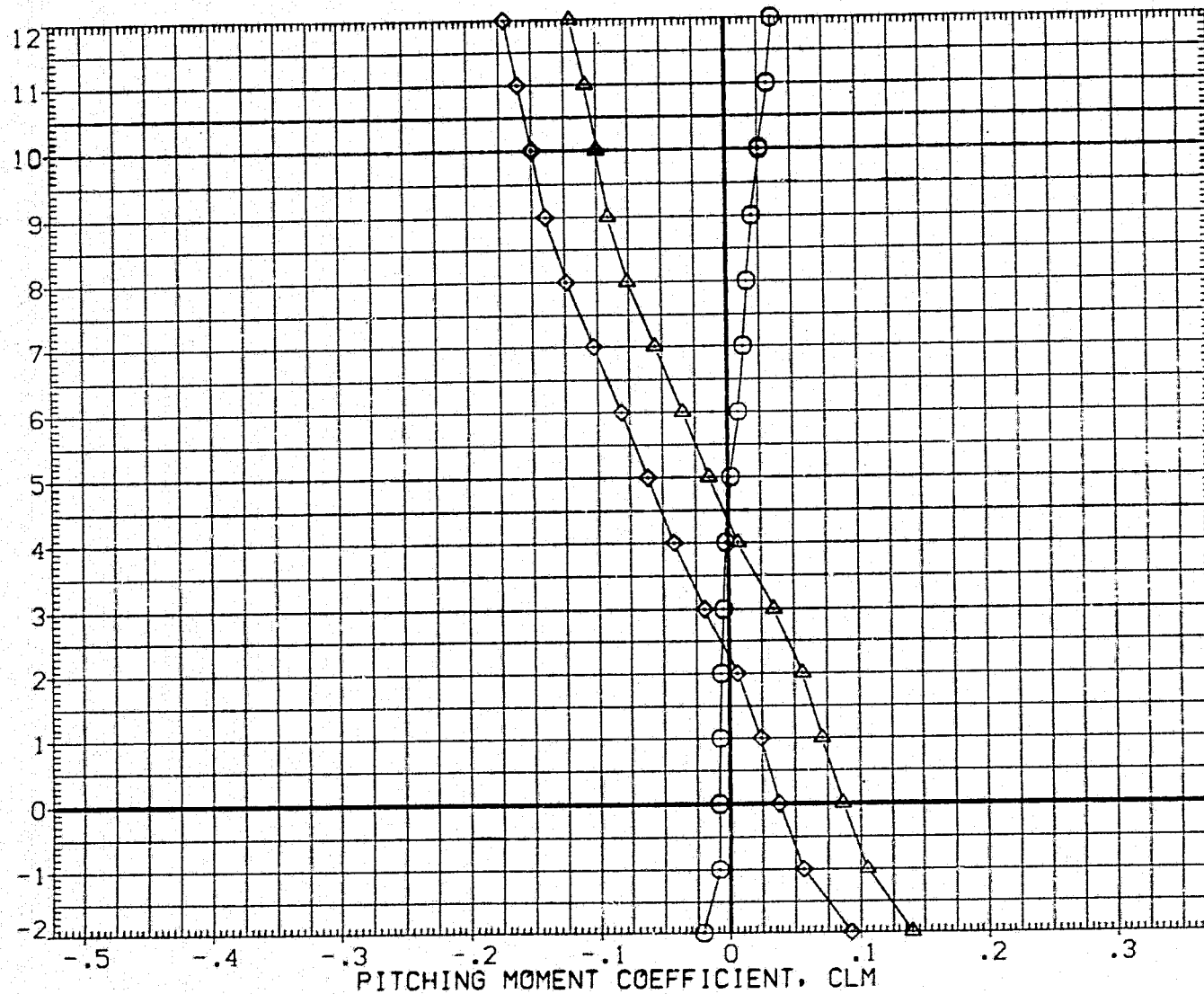


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY  
(A)MACH = .15



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION	
(RGM107)	CA5 K1 FO V9.1 (PLUS. ORB TCS AT38.3)	1.000	4.000	.000	SREF	5500.0000 SQ.FT.
(RGM116)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	1.000	4.000	.000	LREF	327.8000 IN.
(RGM117)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	-2.000	4.000	.000	BREF	2348.0000 IN.
(RGM112)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	-3.200	4.000	.000	XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

CARRIER FRL ANGLE OF ATTACK. ALPHA. DEG.

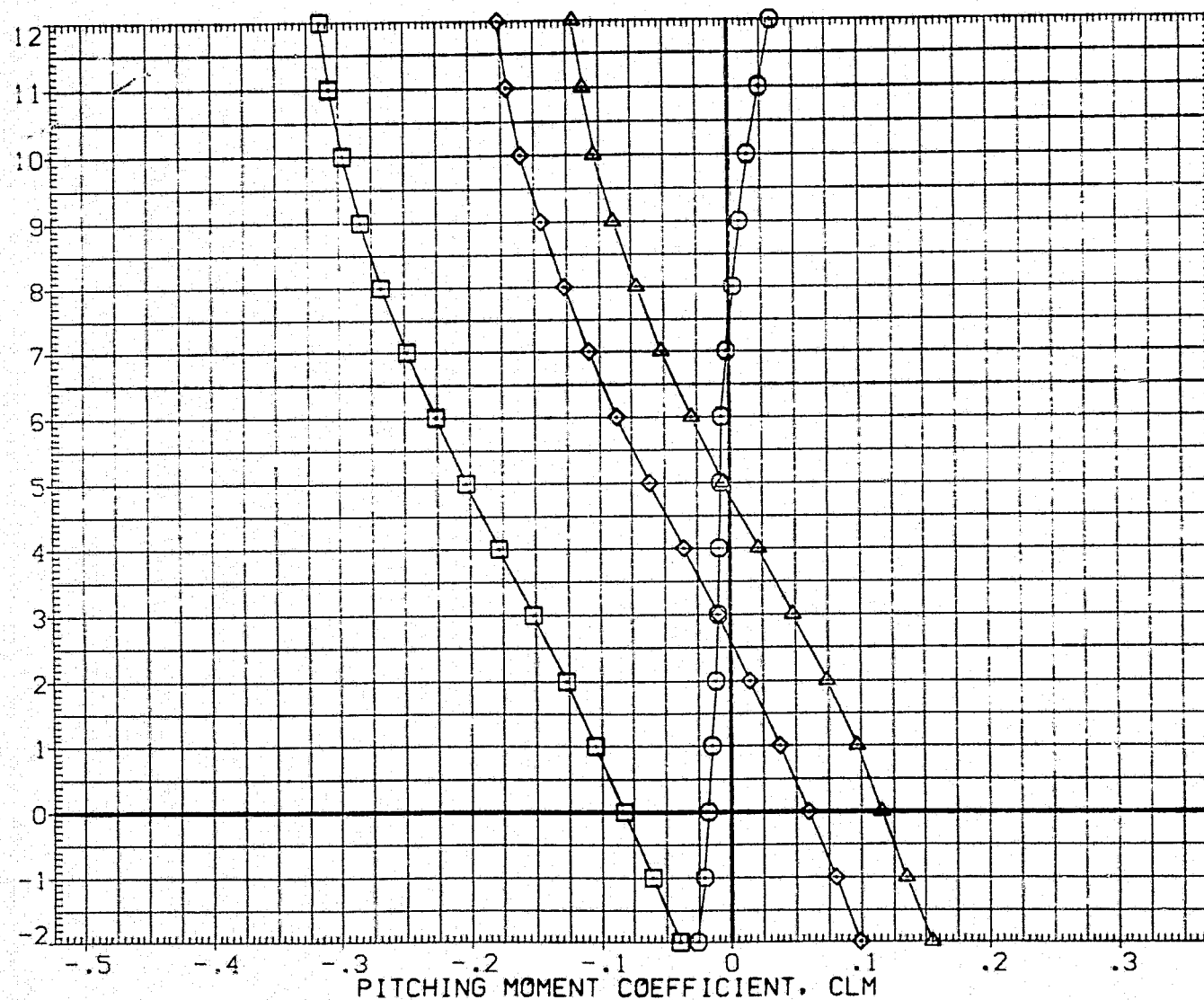


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY  
(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM107)	□ CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM116)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM117)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM112)	△ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )

STAB	IORB	S5-6
1.000	4.000	.000
-2.000	4.000	.000
-3.200	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

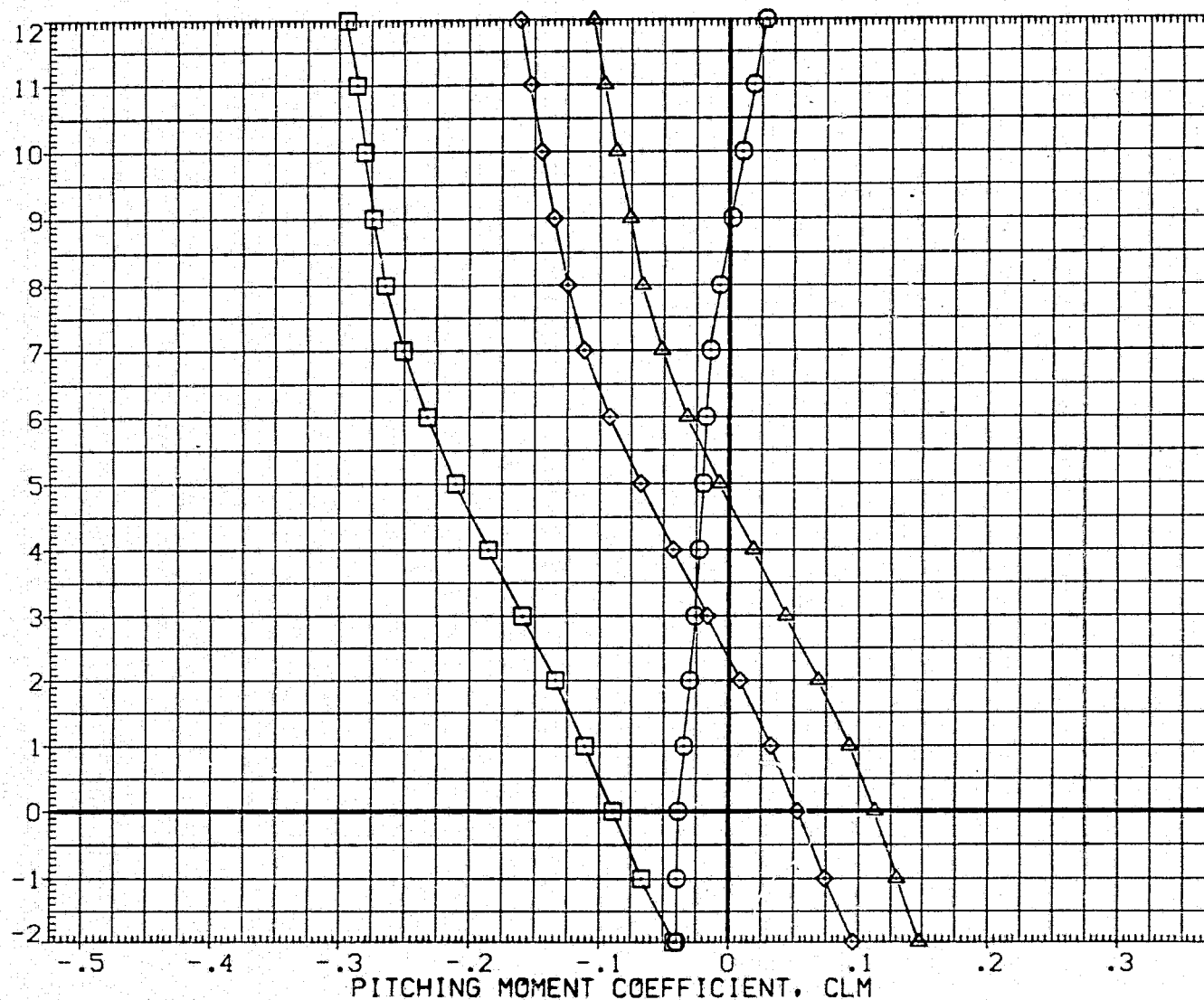


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION	
(RGM107)	CAS KI FO V9.1 (PLUS. ORB TC5 AT38.3 )		4.000	.000	SREF	5500.0000 SQ.FT.
(RGM116)	CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	1.000	4.000	.000	LREF	327.8000 IN.
(RGM117)	CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	4.000	.000	BREF	2348.0000 IN.
(RGM112)	CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-3.200	4.000	.000	XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

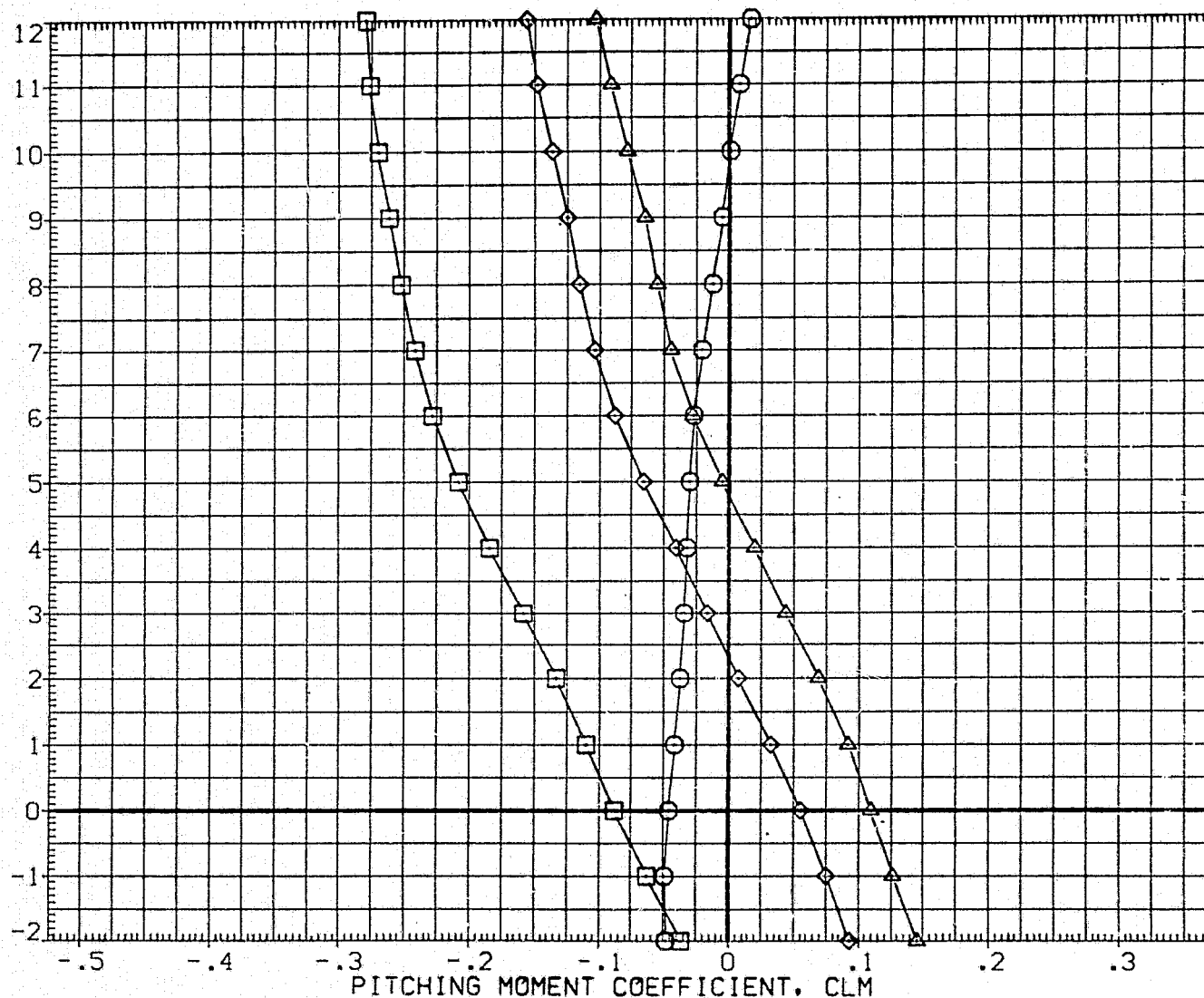


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY  
(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION	
(RGM107)	CA5 K1 FO V9.1 (PLUS. ORB TC5 AT38.3 )		4.000	.000	SREF	5500.0000 SQ.FT.
(RGM116)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	1.000	4.000	.000	LREF	327.8000 IN.
(RGM117)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	4.000	.000	BREF	2348.0000 IN.
(RGM112)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-3.200	4.000	.000	XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

CARRIER FRL ANGLE OF ATTACK. ALPHAW, DEG.

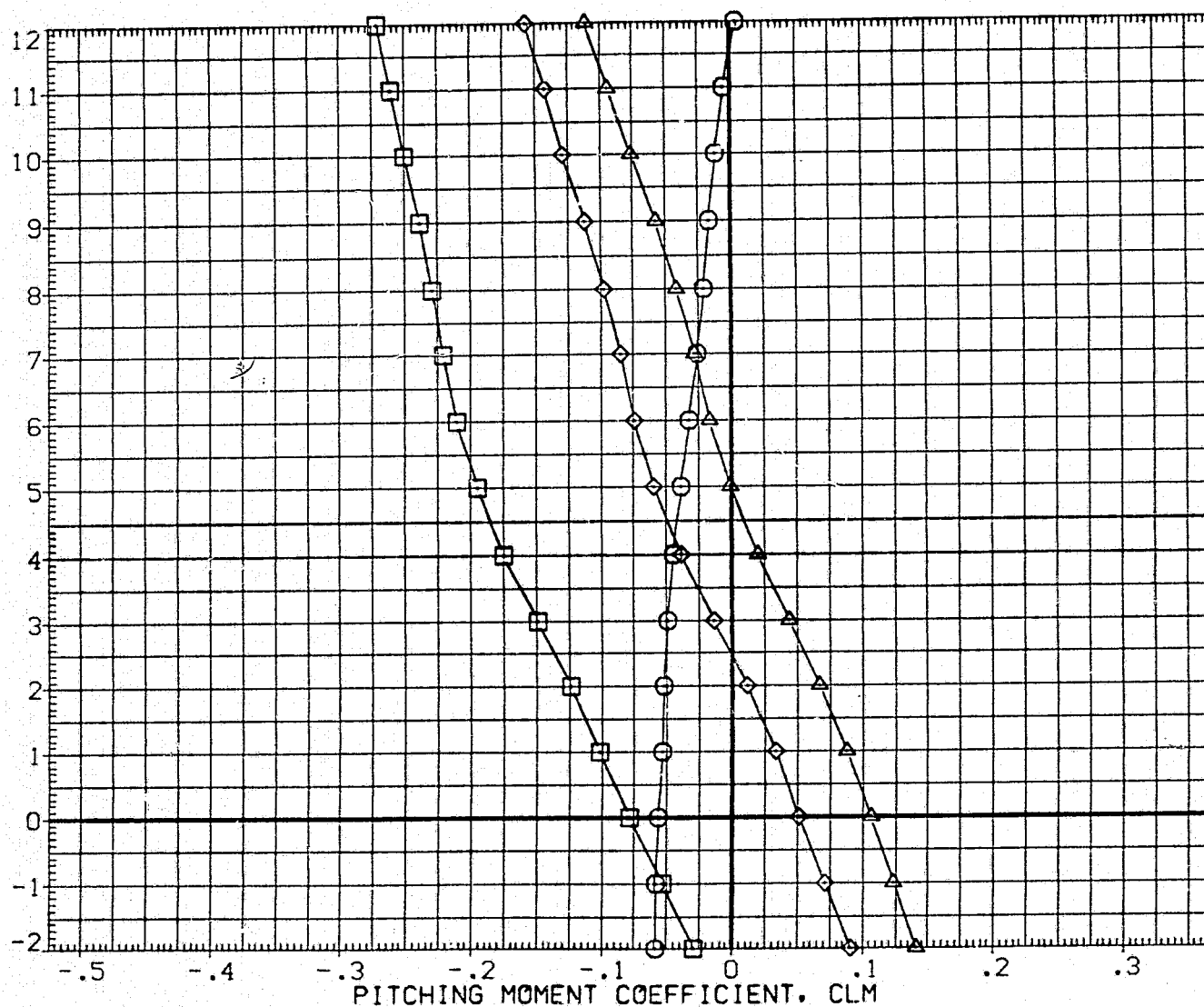


FIG. 231 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY  
(E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION	
(RGM077)	CAS K1 F20 V9.1 (PLUS. ORB TC5 AT38.1 )		9.700	45.000	SREF	5500.0000 SQ.FT.
(FGM065)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	9.700	45.000	LREF	327.8000 IN.
(RGM068)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	-2.000	9.700	45.000	BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

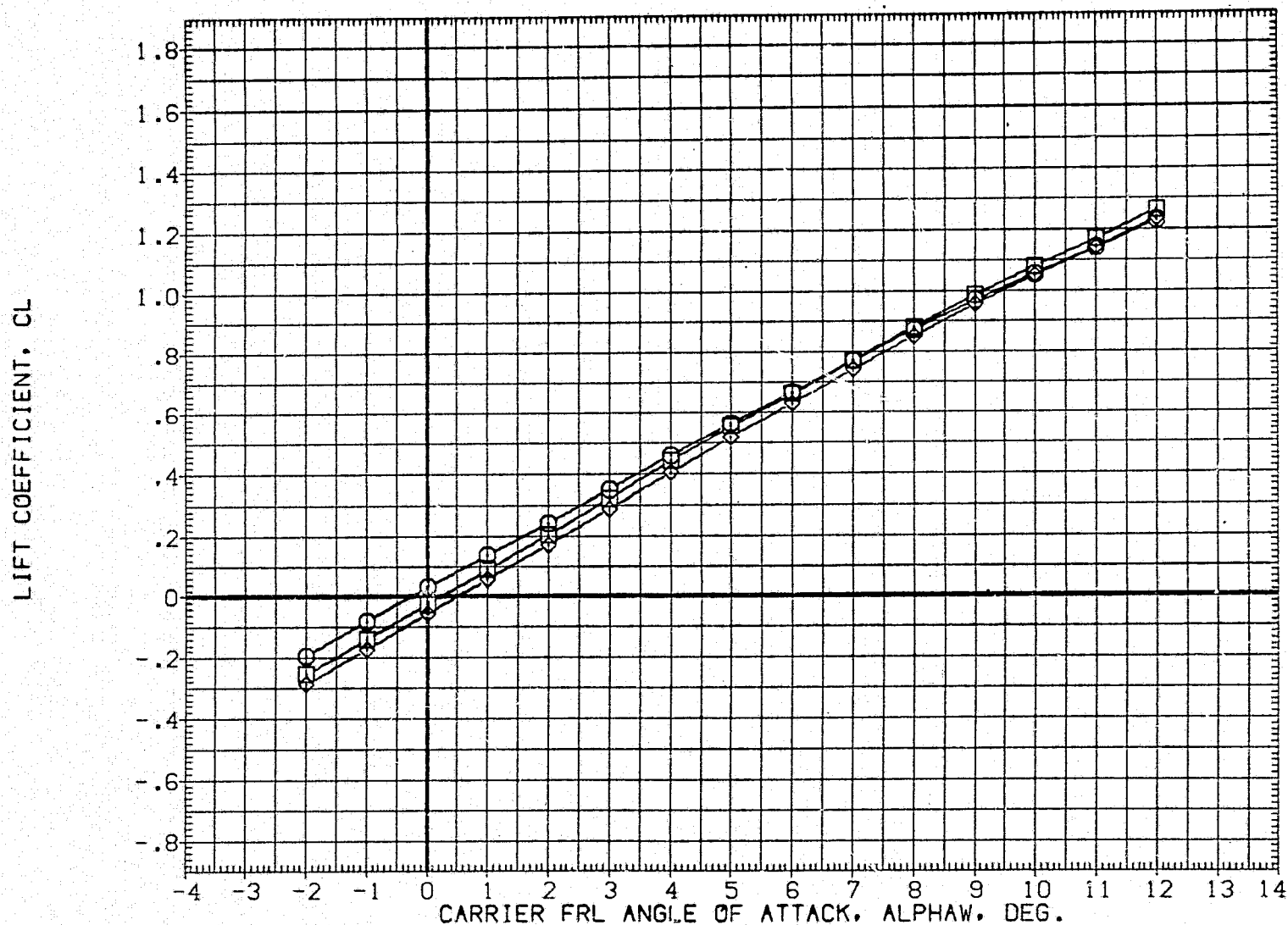


FIG. 232 747+ORB(10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION		
(RGM077)	CA5 K1 F20 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	9.700	45.000	SREF	5500.0000	50.FT.
(FGM065)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	-2.000	9.700	45.000	LREF	327.8000	IN.
(RGM068)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )				BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

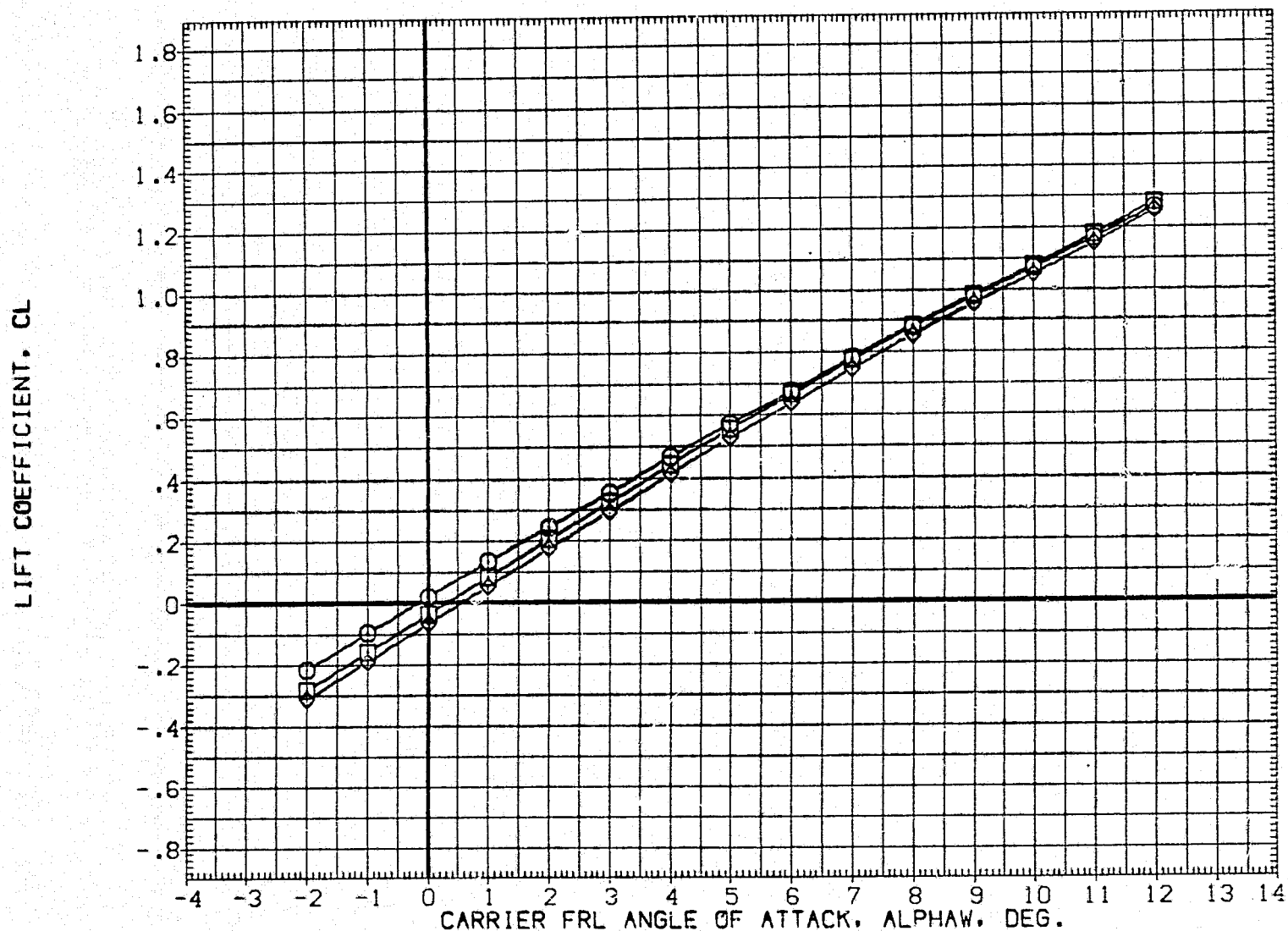


FIG. 232 747+ORB(10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH

(B)MACH = .60



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM077) CAS KI F20 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (FGM065) CAS KI F20 HIS.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM068) CAS KI F20 HIS.6 V9.1 (PLUS. ORB TC5 AT38.1 )

STAB

IORB

S5-6

9.700 45.000  
 1.000 9.700 45.000  
 -2.000 9.700 45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

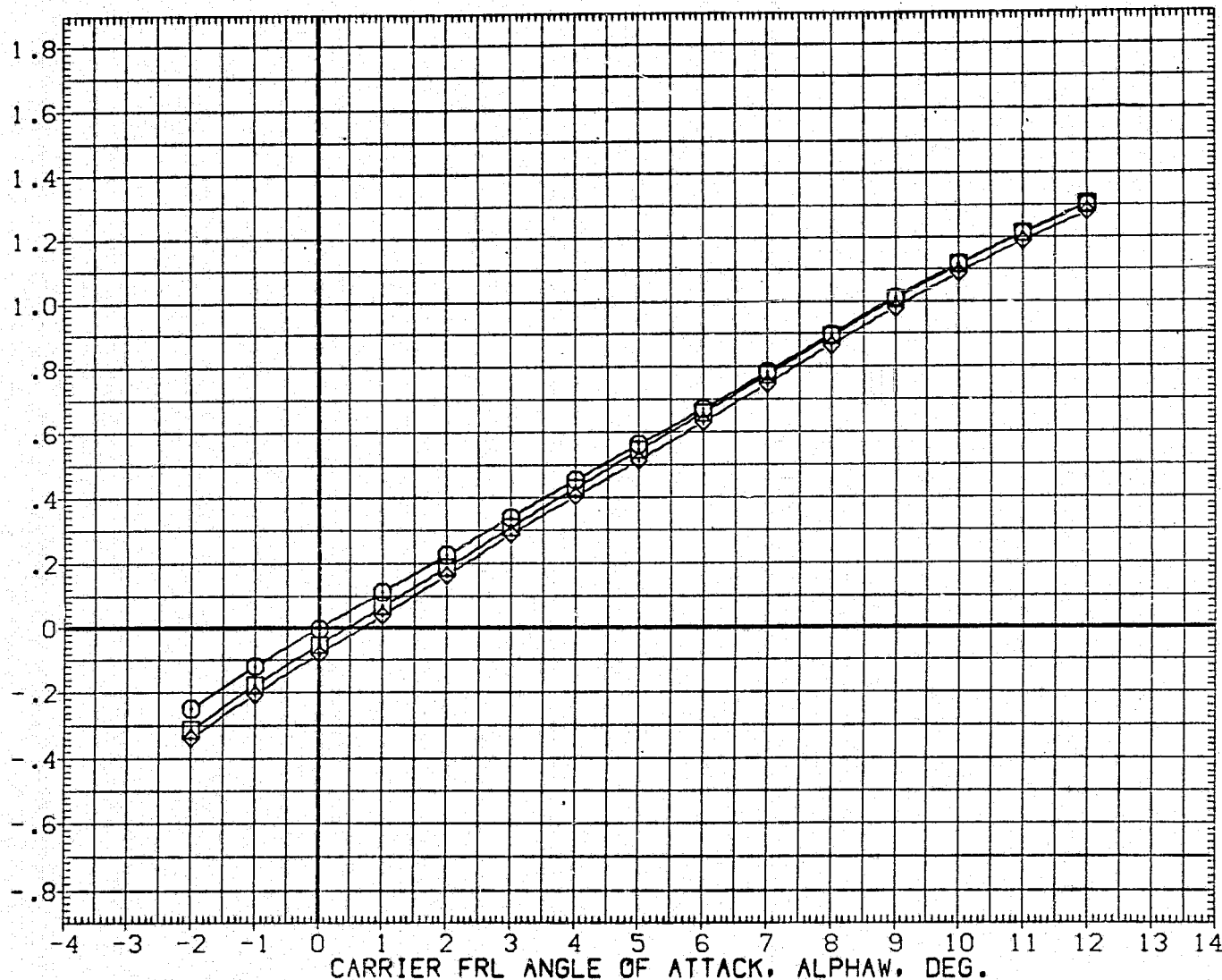


FIG. 232 747+ORB(10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH

(C)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM077) CAS K1 F20 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (FGM065) CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM068) CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

STAB

IORB

S5-E

1.000 9.700 45.000  
 -2.000 9.700 45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

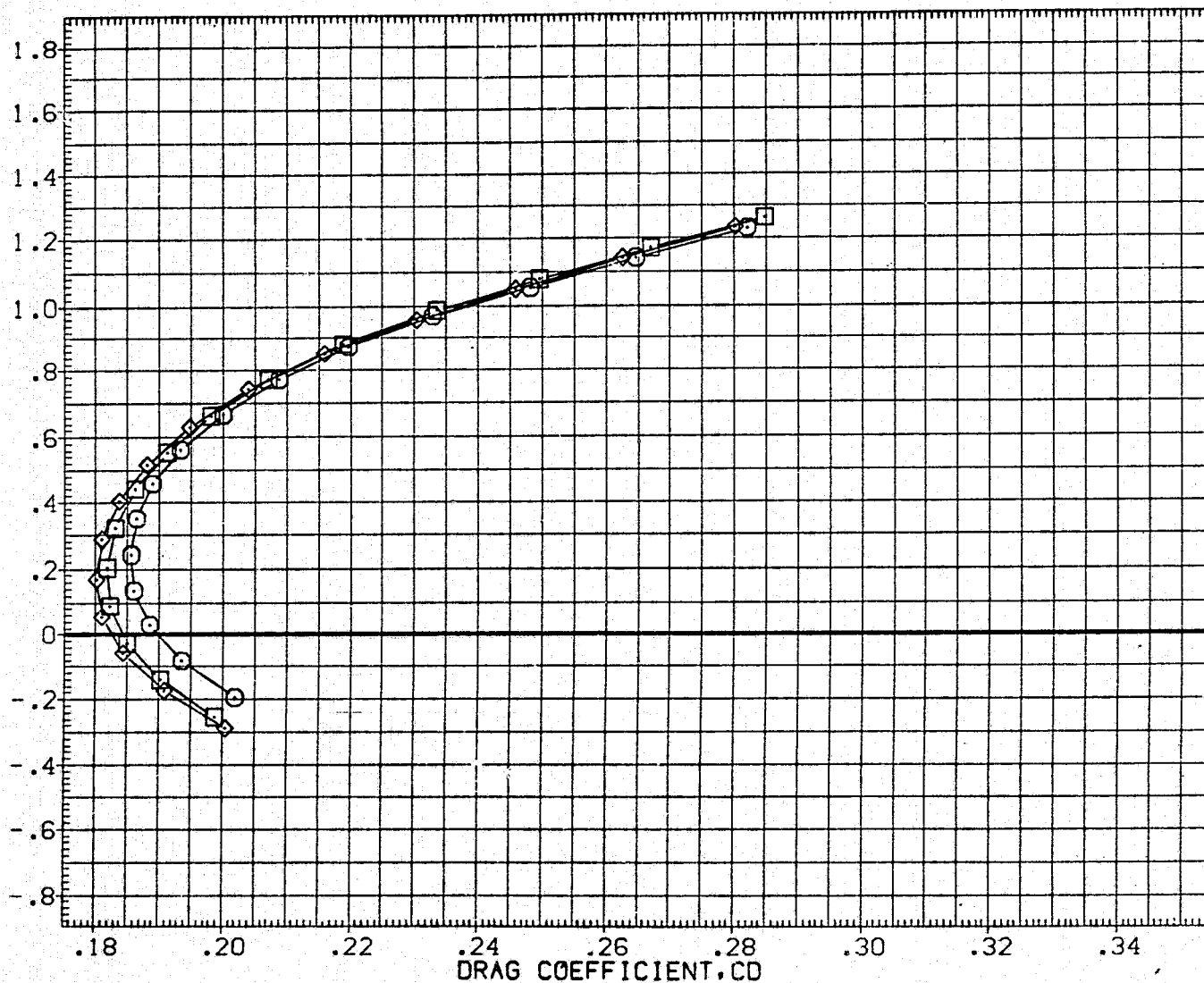


FIG. 232 747+ORB(10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH

(A) MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(RGM077)	CA5 K1 F20 V9.1 (PLUS. ORB TC5 AT38.1 )		9.700	45.000
(FGM065)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	9.700	45.000
(RGM068)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	-2.000	9.700	45.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

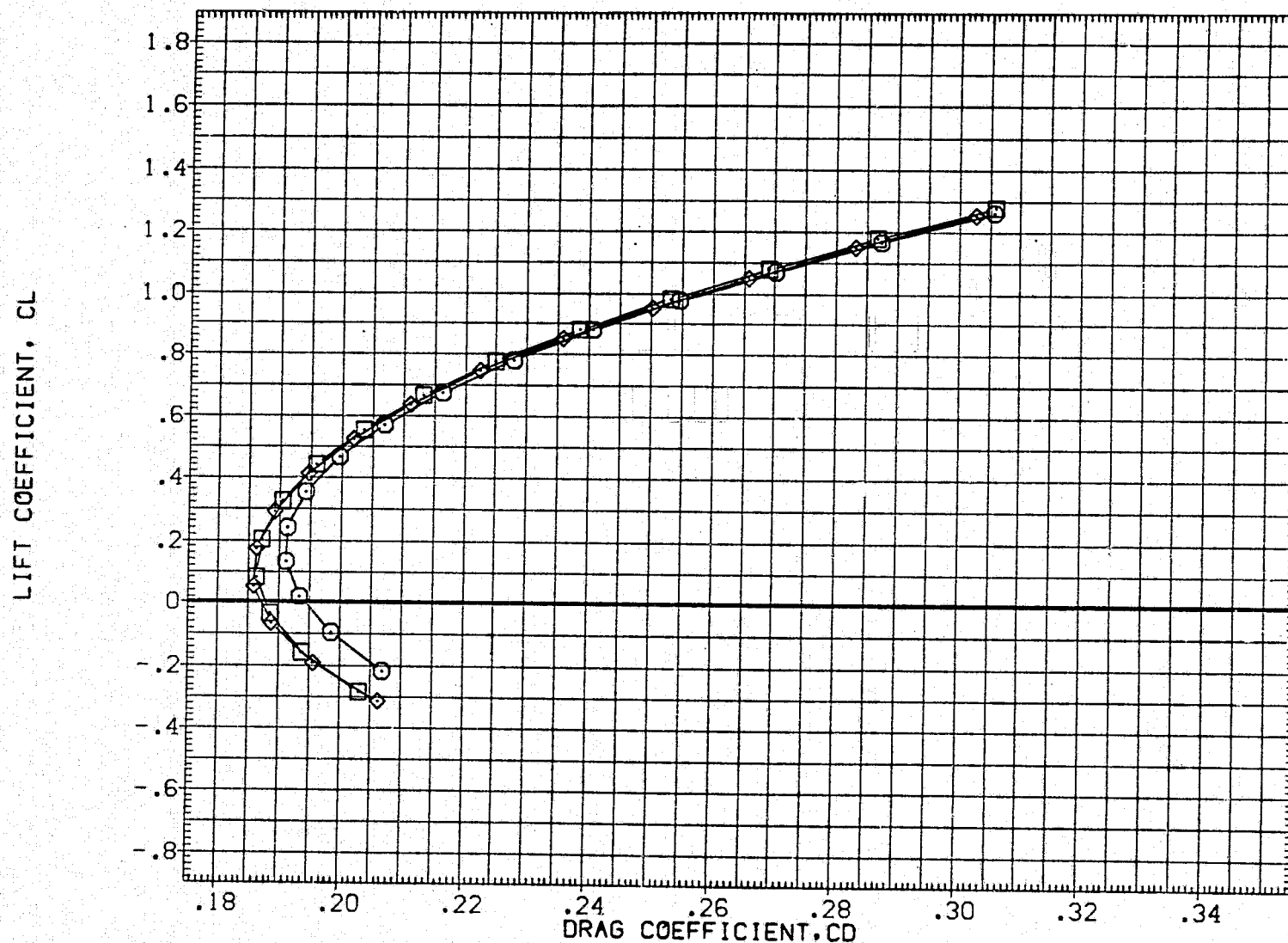


FIG. 232 747+ORB(10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM077) CAS KI F20 V9.1 (PLUS. ORB TCS AT38.1 )  
 (FGM065) CAS KI F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )  
 (RGM068) CAS KI F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )

STAB

IORB

S5-6

1.000 9.700 45.000  
 -2.000 9.700 45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

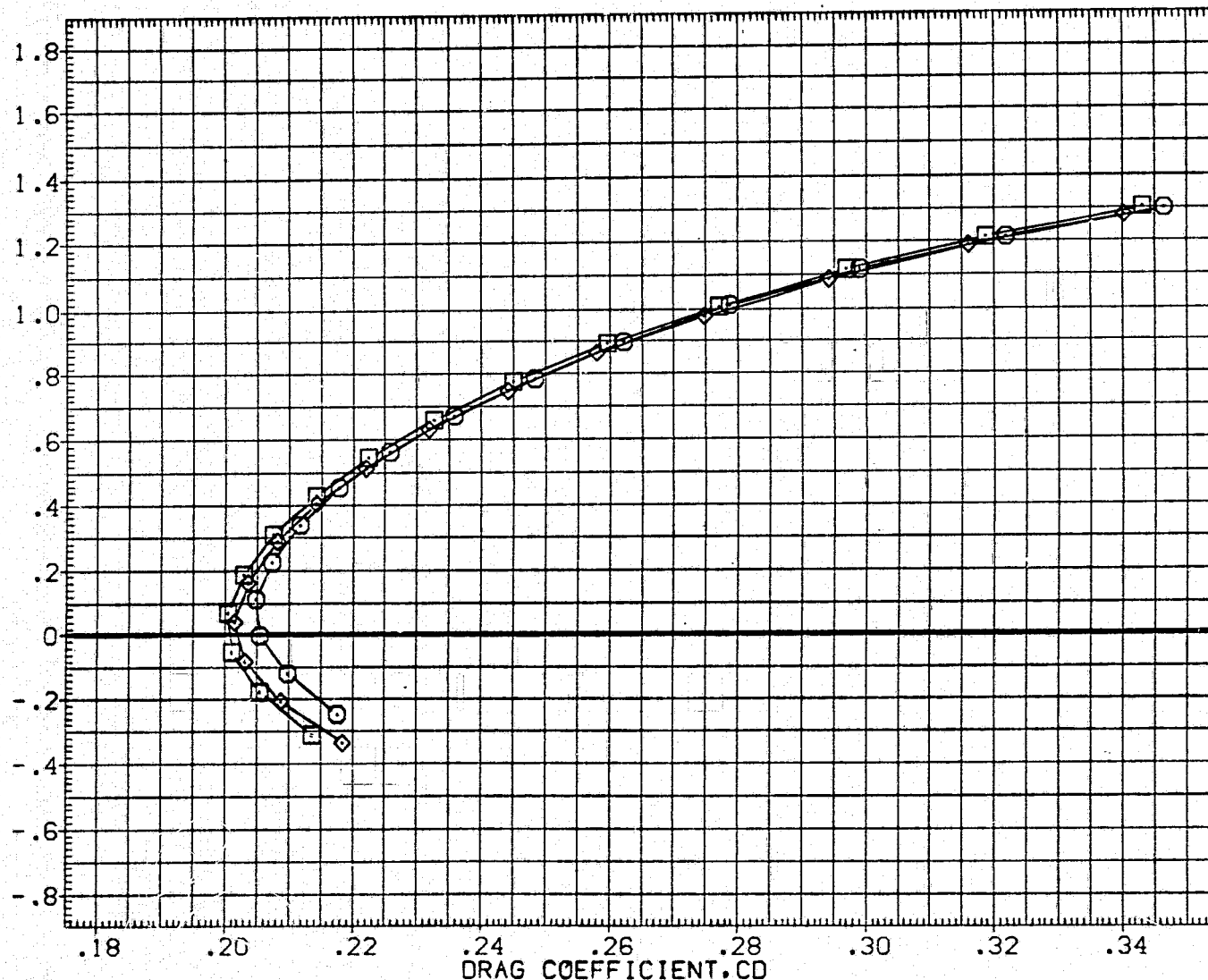


FIG. 232 747+ORB(10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM077)	CAS K1 F20 V9.1 (PLUS. ORB TCS AT38.1)		9.700	45.000
(FGM065)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	1.000	9.700	45.000
(RGM068)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	-2.000	9.700	45.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	



FIG. 232 747+ORB(10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION		
(RGM077)	CAS K1 F20 V9.1 (PLUS. ORB TC5 AT38.1)		9.700	45.000	SREF	5500.0000	SQ. FT.
(FGM065)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	9.700	45.000	LREF	327.8000	IN.
(RGM068)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	-2.000	9.700	45.000	BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

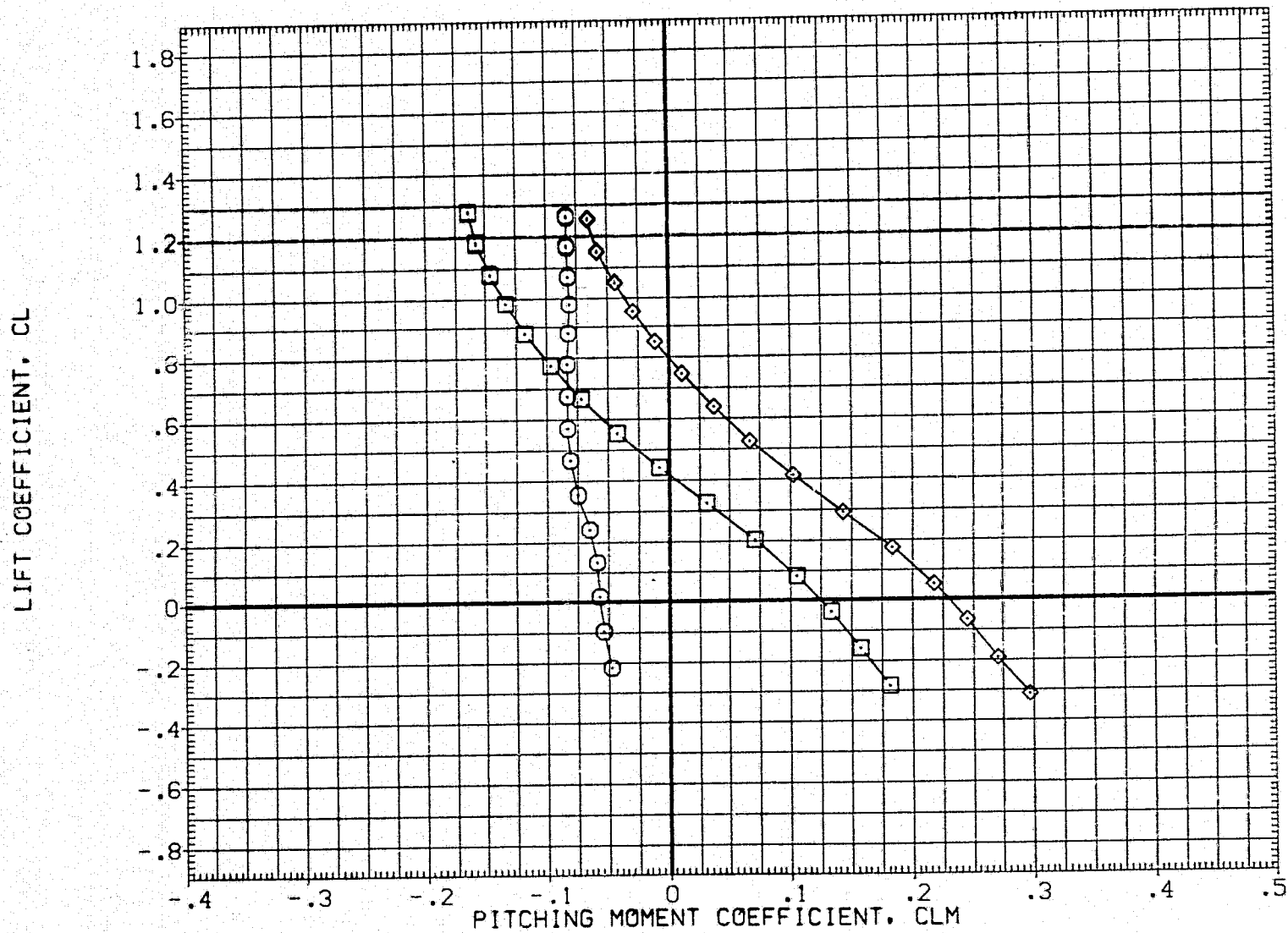


FIG. 232 747+ORB(10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH  
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(RGM077)	CA5 K1 F20 V9.1 (PLUS. ORB TCS AT38.1 )		9.700	45.000
(FGM065)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	9.700	45.000
(RGM068)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	-2.000	9.700	45.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1.339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

LIFT COEFFICIENT, CL

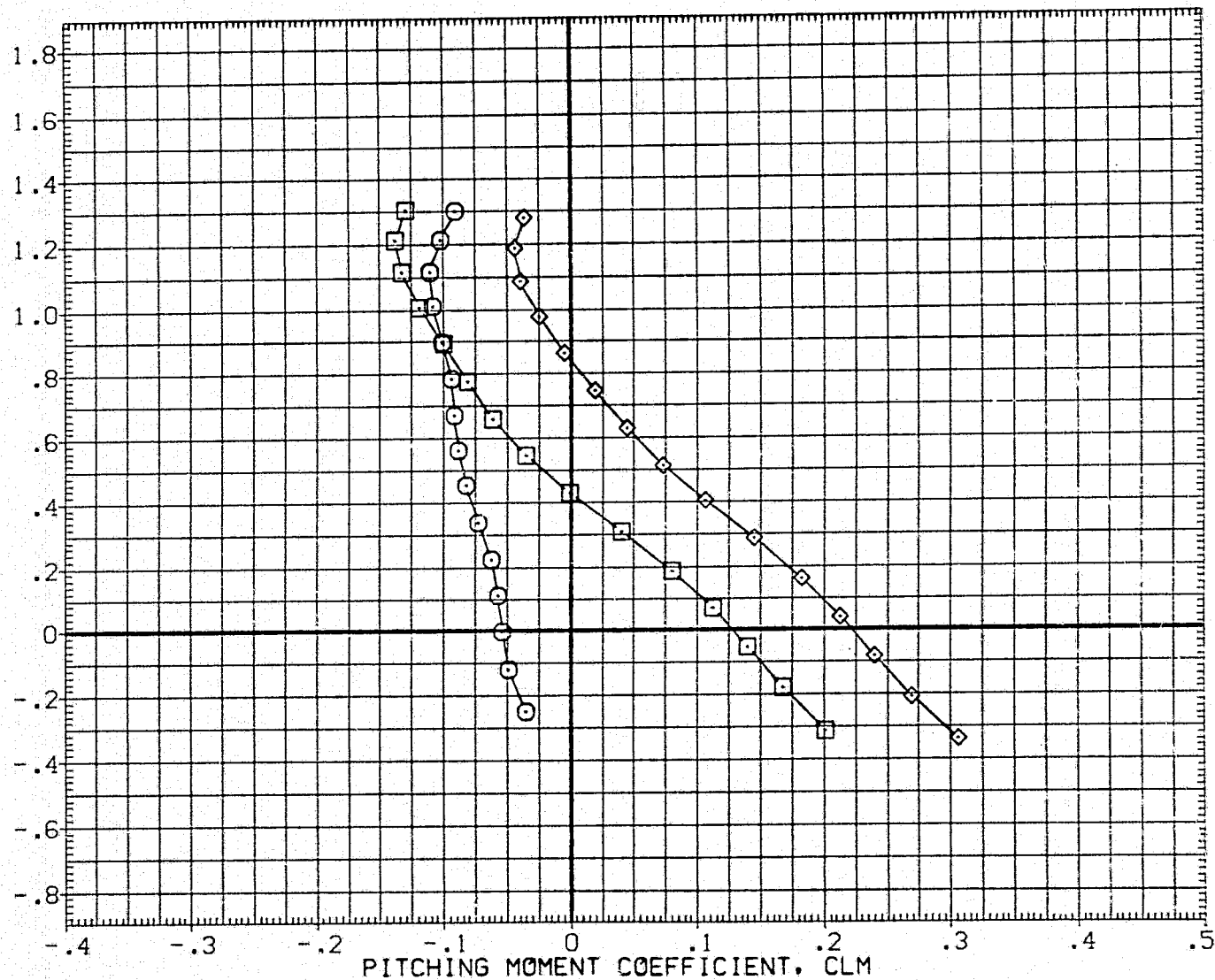


FIG. 232 747+ORB(10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM077)	□ CAS K1 F20 V9.1 (PLUS. ORB TCS AT38.1 )
(FGM065)	○ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )
(RGM068)	◇ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )

STAB	IORB	S5-6
1.000	9.700	45.000
-2.000	9.700	45.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

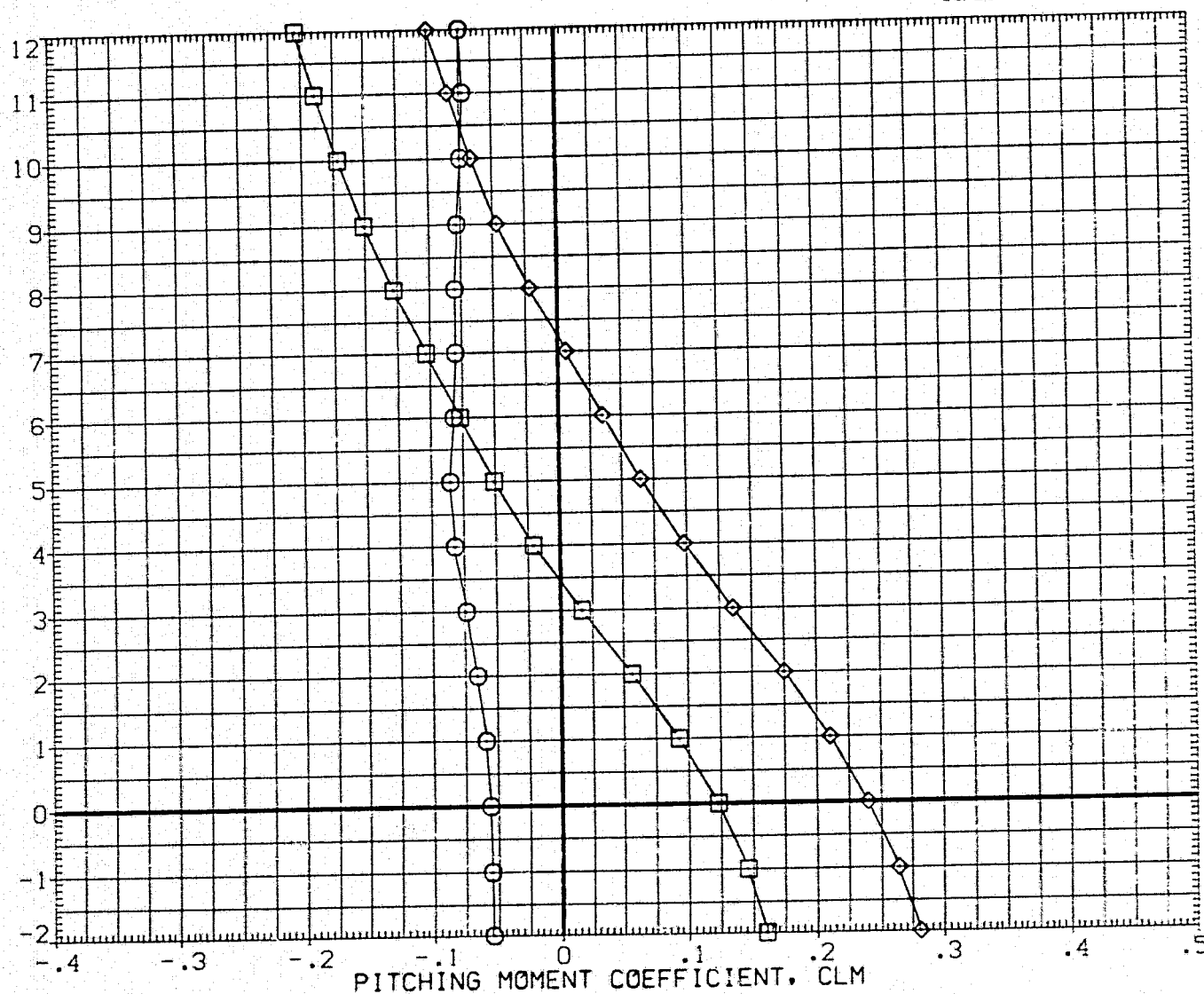


FIG. 232 747+ORB(10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH

(A)MACH = .50



DATA SET SYMBOL CONFIGURATION DESCRIPTION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM077)	CA5 K1 F20 V9.1 (PLUS. ORB TC5 AT38.1)
(FGM065)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)
(RGM068)	CA5 K1 F20 H15.6 VS.1 (PLUS. ORB TC5 AT38.1)

STAB	IORB	SS-6
1.000	9.700	45.000
-2.000	9.700	45.000

REFERENCE INFORMATION

SREF	5500.0000	50. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

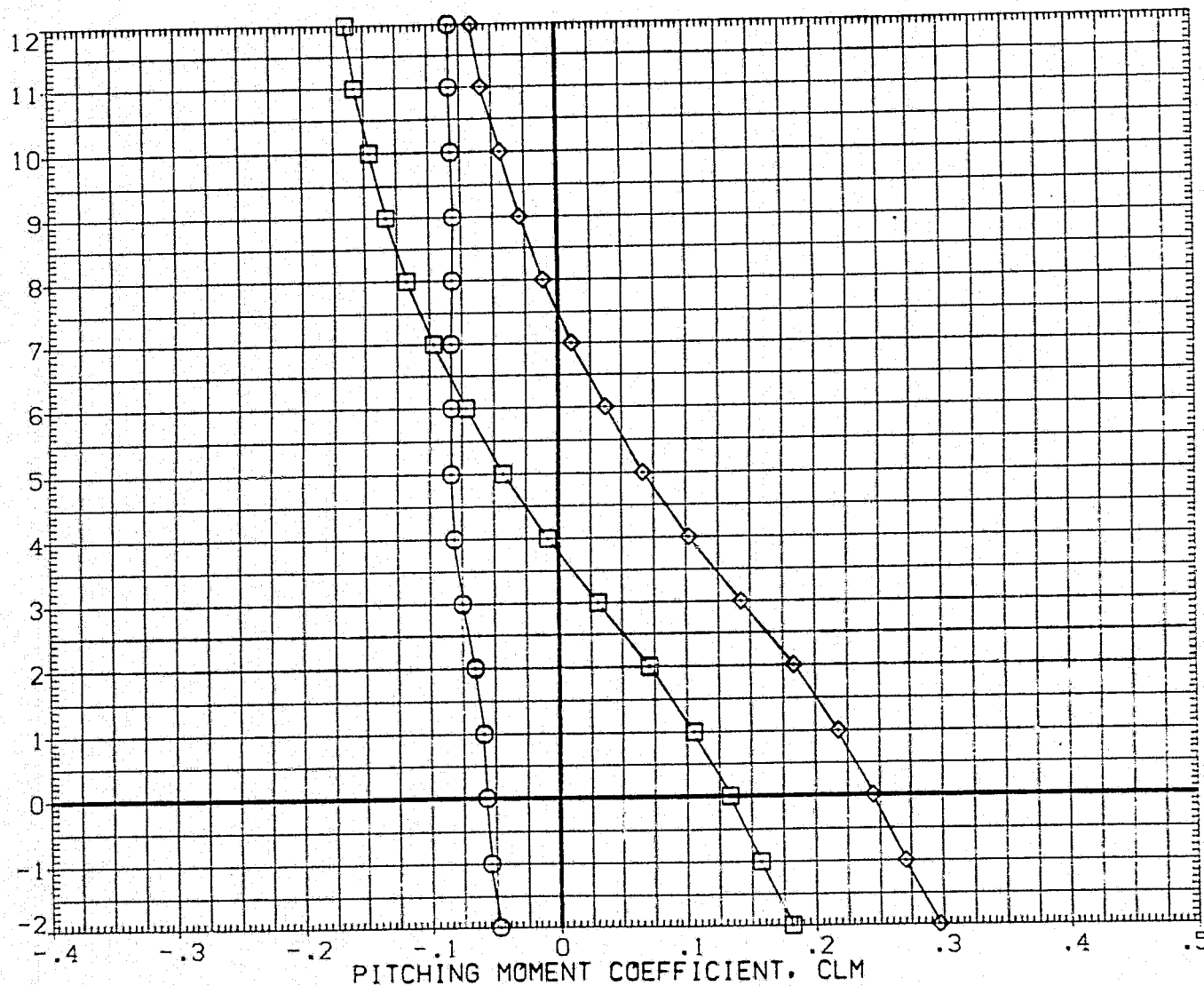


FIG. 232 747+ORB(10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH  
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION		
(RGM077)	CAS K1 F20 V9.1 (PLUS. ORB TCS AT38.1)	1.000	9.700	45.000	SREF	5500.0000	SG.FT.
(FGM065)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	-1.000	9.700	45.000	LREF	327.8000	IN.
(RGM068)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	-2.000	9.700	45.000	BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

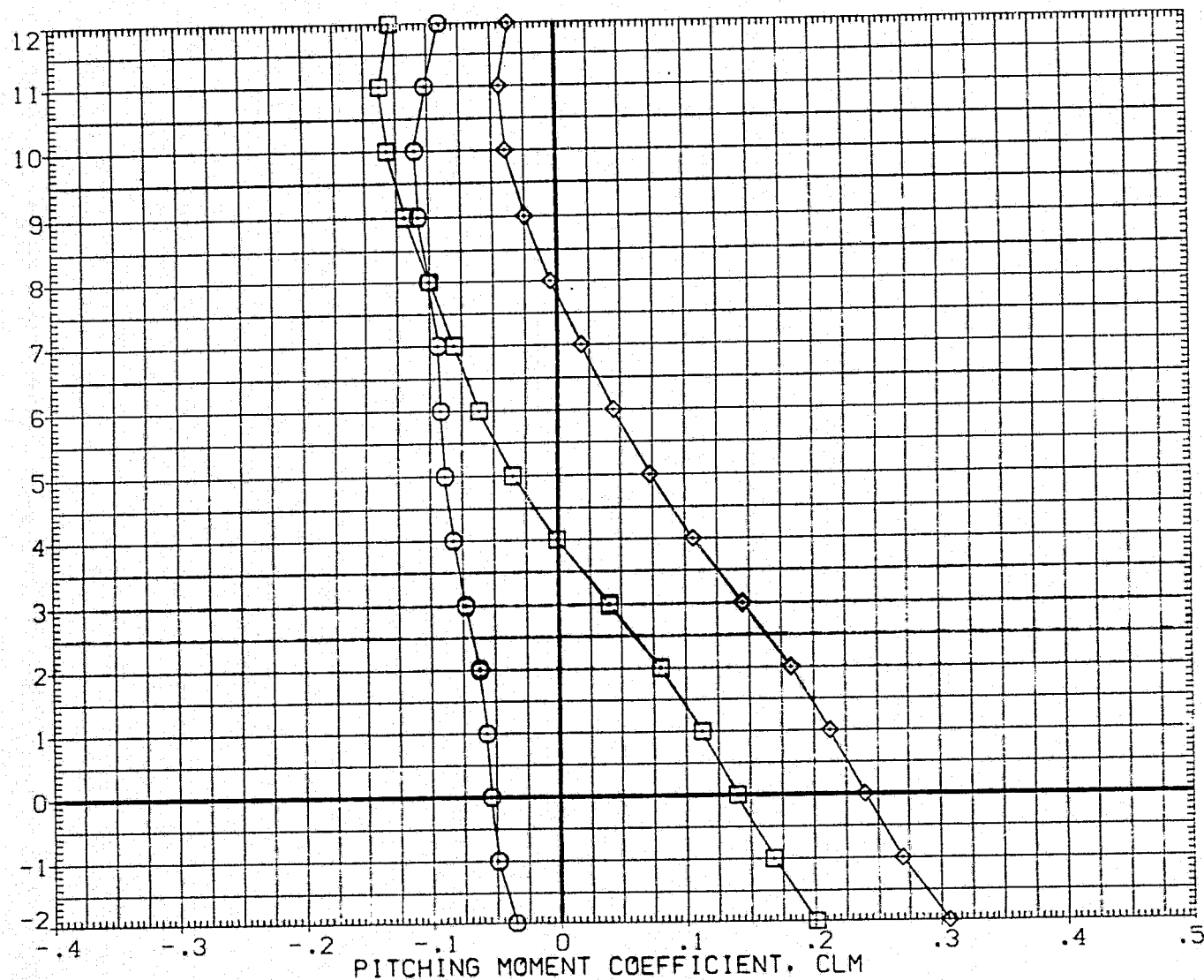


FIG. 232 747+ORB(10 DEG), STABILIZER EFFECT, FLAPS 20 LAUNCH

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMO45)	BTWT-1431CA5 KI FO H15.6 V9.1
(RGMO47)	BTWT-1431CA5 KI FO H15.6 V9.1
(RGMO48)	BTWT-1431CA5 KI FO H15.6 V9.1

STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION	
1.000	.000	3.000	20.000	SREF	5500.0000 SQ.FT.
1.000	10.000	13.000	20.000	LREF	327.8000 IN.
1.000	-10.000	-7.000	20.000	BREF	2348.0000 IN.
				XMRP	1339.9100 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

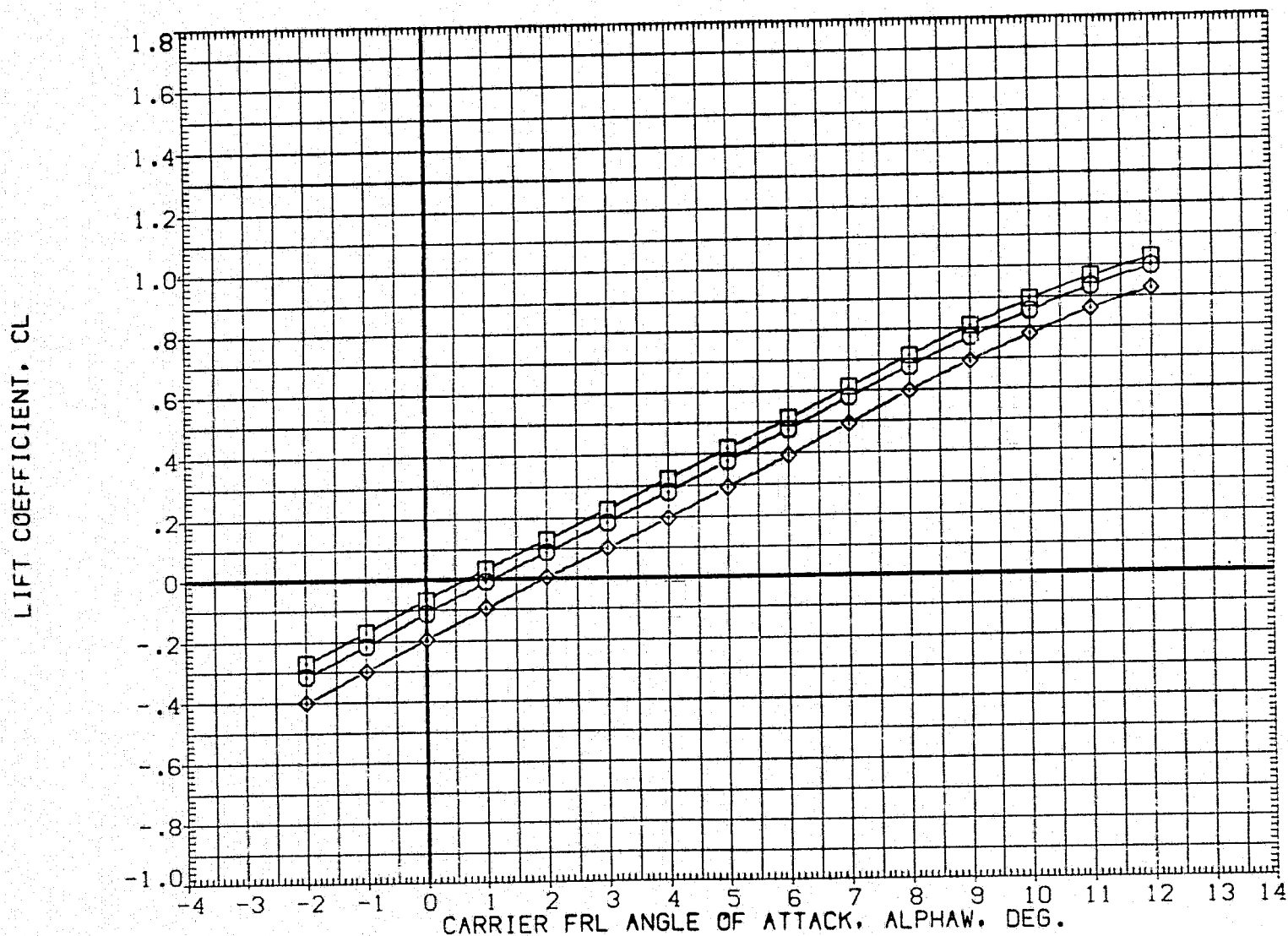


FIG. 233 747 ALONE, ELEVATOR EFFECT FLAPS UP  
(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(RGM045)	BTWT-1431CA5 KI	FO H15.6 V9.1
(RGM047)	BTWT-1431CA5 KI	FO H15.6 V9.1
(RGM048)	BTWT-1431CA5 KI	FO H15.6 V9.1

STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION	
1.000	.000	3.000	20.000	SREF	5509.0000 SQ.FT.
1.000	10.000	13.000	20.000	LREF	327.8000 IN.
1.000	-10.000	-7.000	20.000	BREF	2348.0000 IN.
				XMRP	1339.9100 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

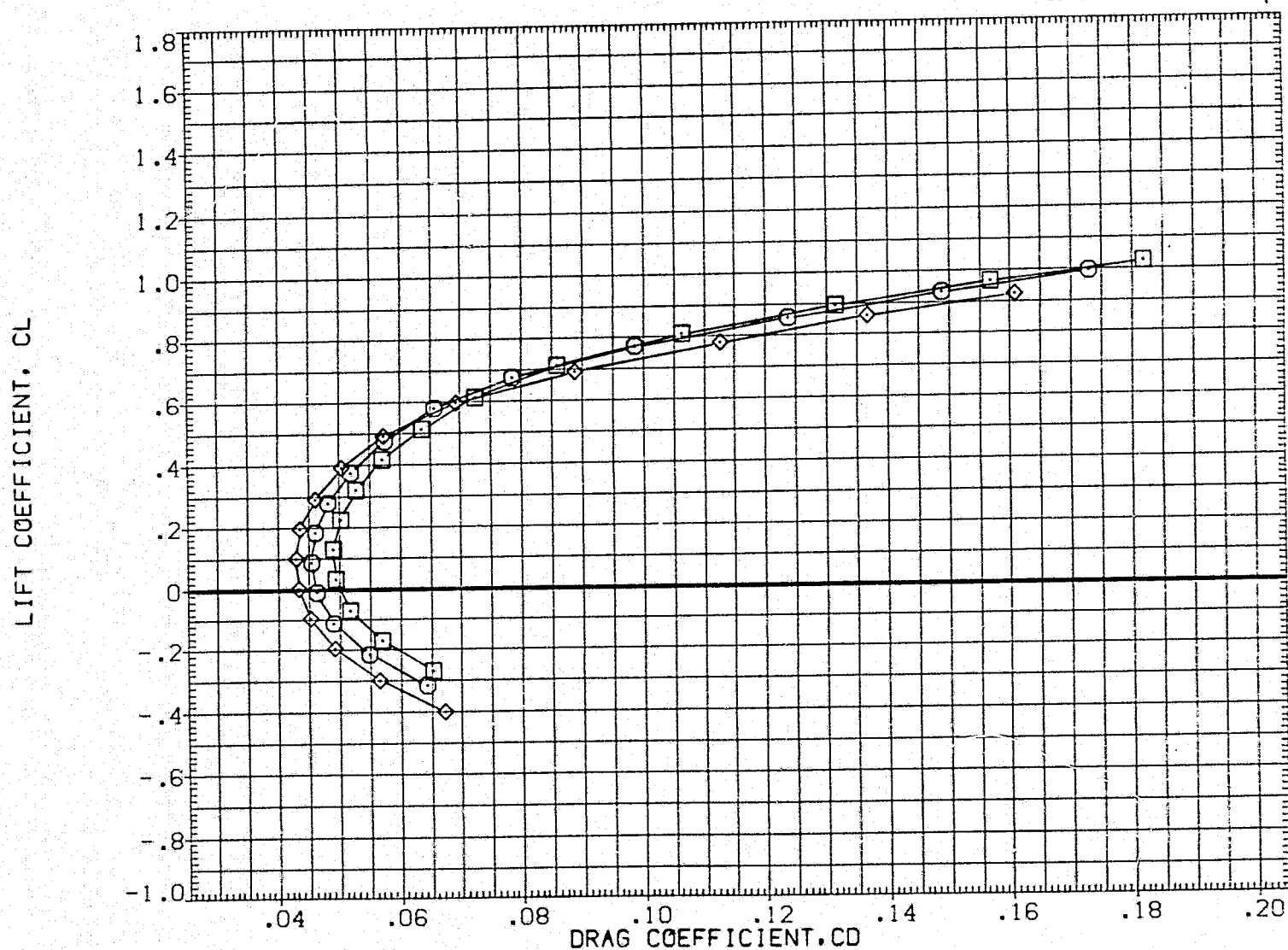


FIG. 233 747 ALONE, ELEVATOR EFFECT FLAPS UP  
(A) MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM045)	BTWT-1431CA5 K1 FO H15.6 V9.1
(RGM047)	BTWT-1431CA5 K1 FO H15.6 V9.1
(RGM048)	BTWT-1431CA5 K1 FO H15.6 V9.1

STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION	
1.000	.000	3.000	20.000	SREF	5500.0000 SQ.FT.
1.000	10.000	13.000	20.000	LREF	327.8000 IN.
1.000	-10.000	-7.000	20.000	BREF	2348.0000 IN.
				XMRP	1339.9100 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

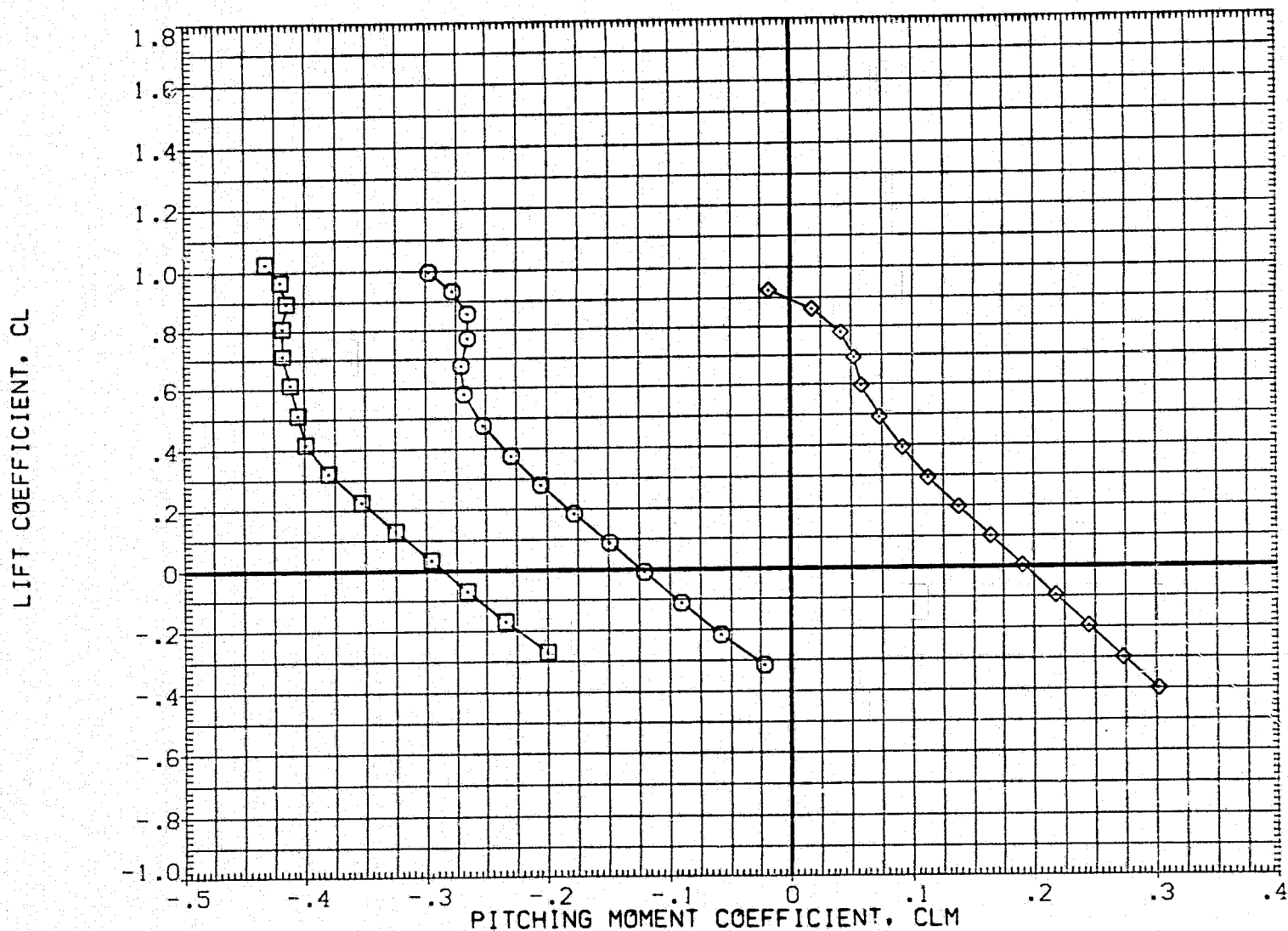


FIG. 233 747 ALONE, ELEVATOR EFFECT FLAPS UP

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM045)	BTWT-1431CA5 K1 FO H:5.6 V9.1
(RGM047)	BTWT-1431CA5 K1 FO H:5.6 V9.1
(RGM048)	BTWT-1431CA5 K1 FO H:5.6 V9.1

STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION		
1.000	.000	3.000	20.000	SREF	5500.0000	SQ.FT.
1.000	10.000	13.000	20.000	LREF	327.8000	IN.
1.000	-10.000	-7.000	20.000	BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

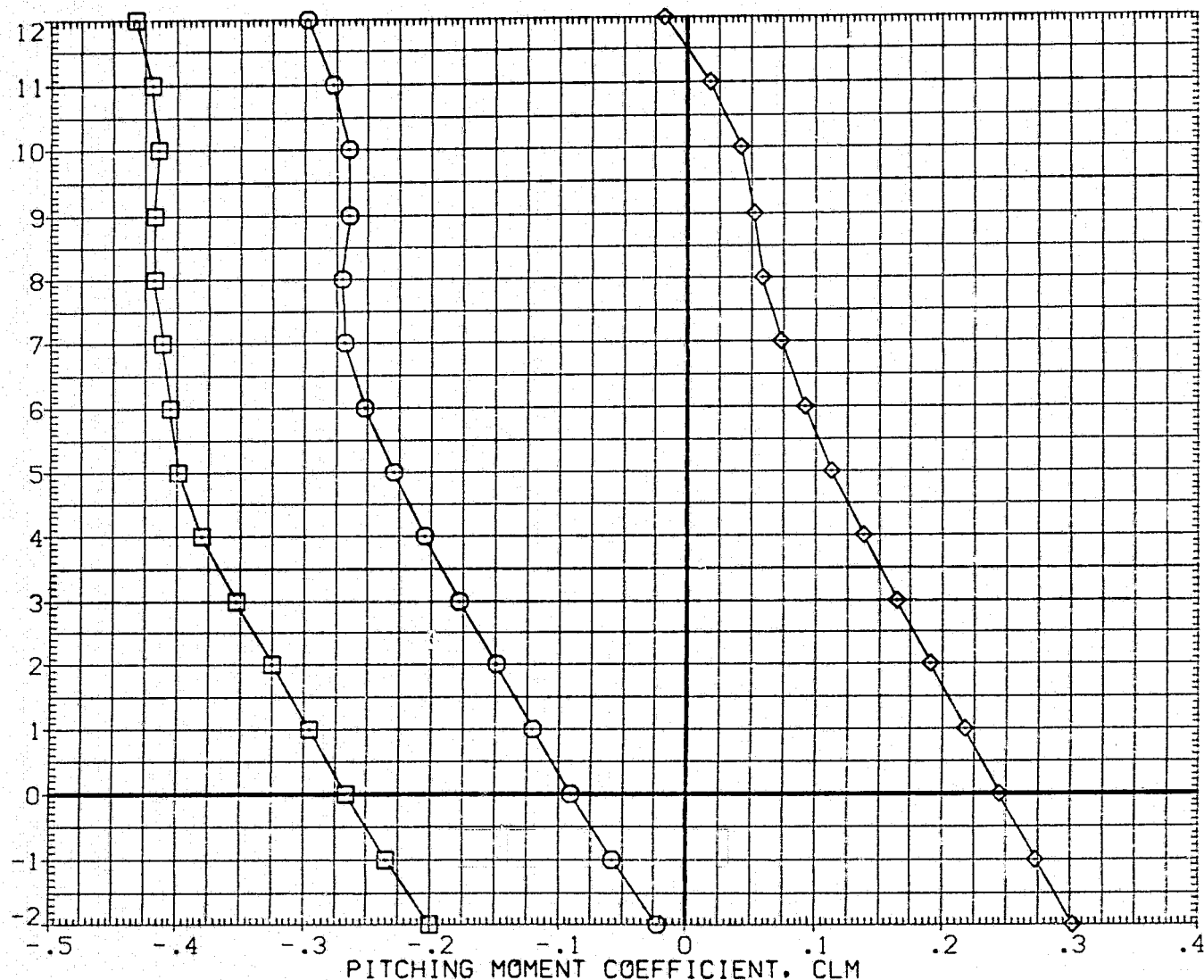


FIG. 233 747 ALONE, ELEVATOR EFFECT FLAPS UP

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM045) <input type="checkbox"/>	BTWT-1431CA5 KI FO H15.6 .9.1
(RGM046) <input type="checkbox"/>	BTWT-1431CA5 KI FO H15.6 V9.1

BETA	STAB	SS-6
.000	1.000	20.000
5.000	1.000	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

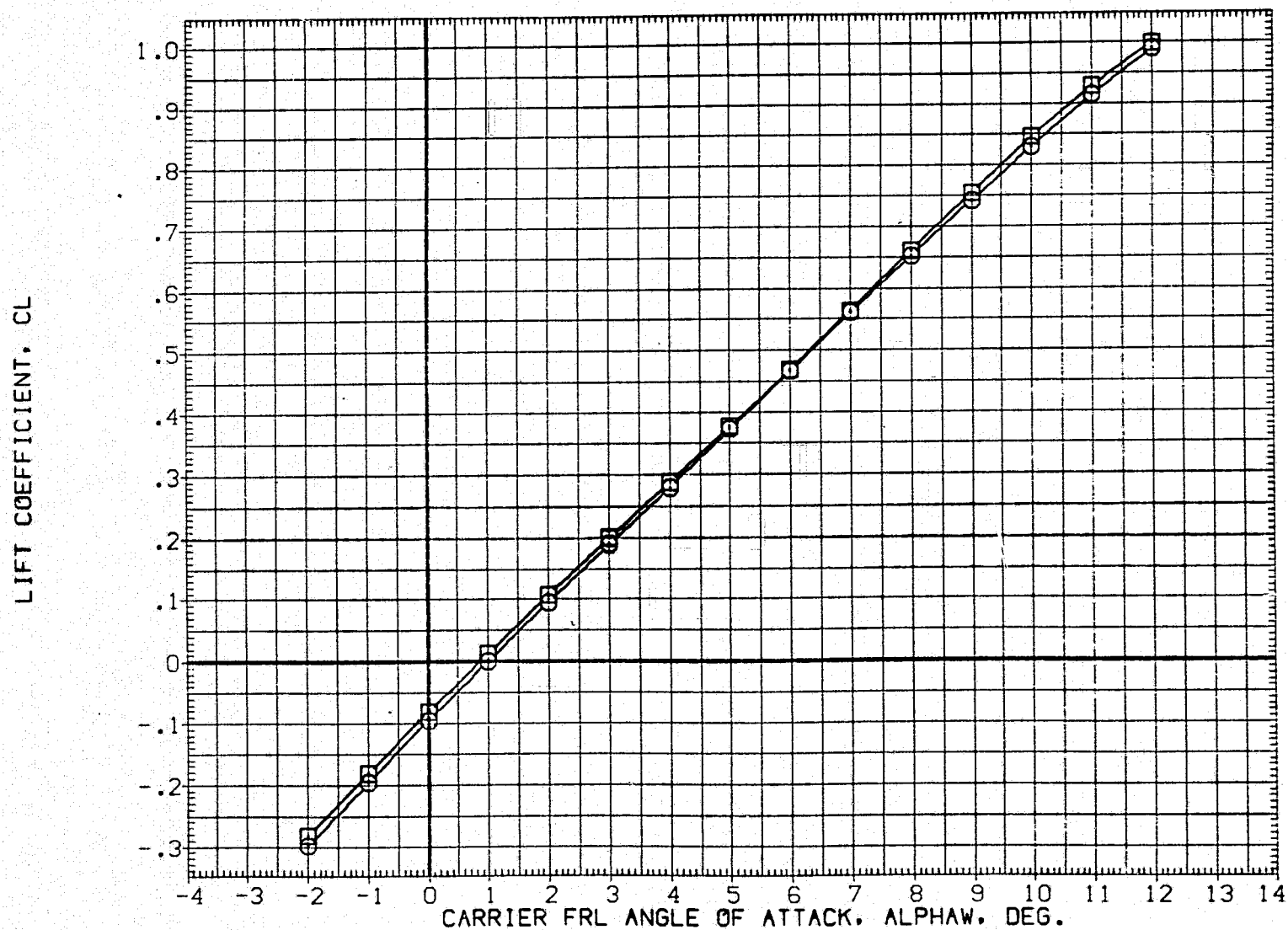




FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD45)  BTWT-1431CA5 KI FO H15.6 V9.1  
 (RGMD46)  BTWT-1431CA5 KI FO H15.6 V9.1

BETA STAB 95-6  
 .000 1.000 20.000  
 5.000 1.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

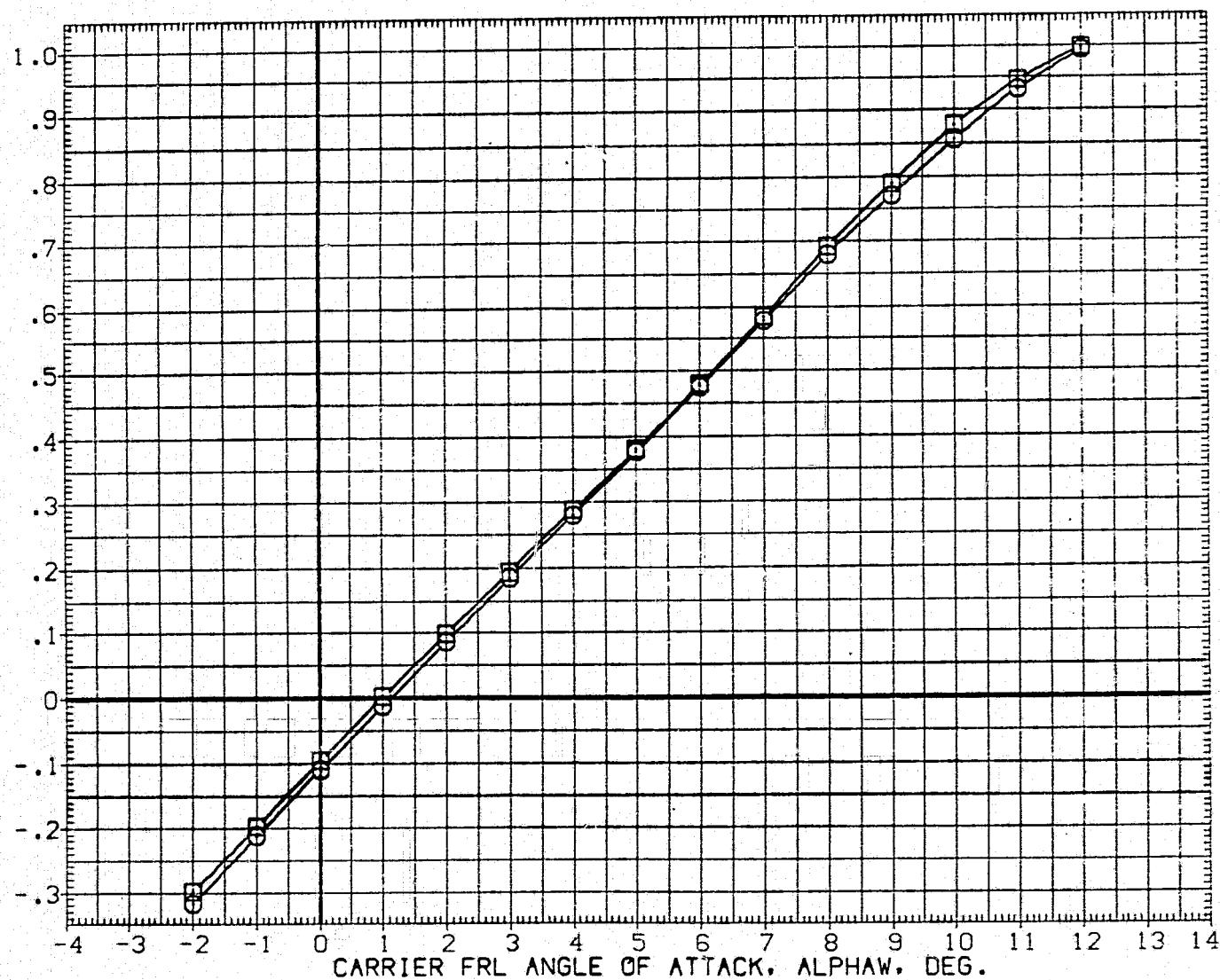




FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP

(B) MACH = .60



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM045)  BTVT-1431CAS K1 FD H15.6 V9.1  
 (RGM046)  BTVT-1431CAS K1 FD H15.6 V9.1

BETA	STAB	SS-6
.000	1.000	20.000
5.000	1.000	20.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

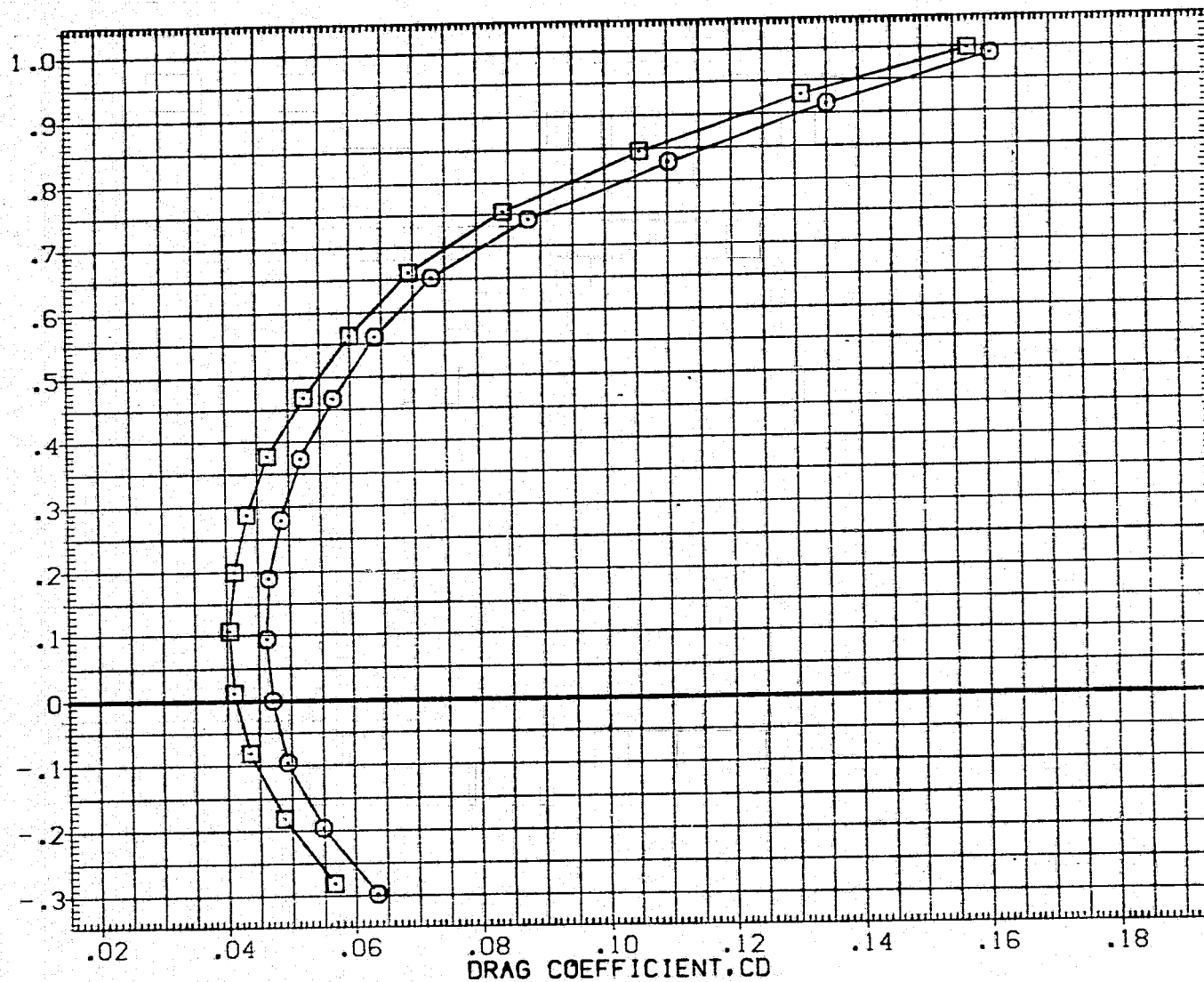


FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP

(A) MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD45) ☐ BTWT-1431CA5 K1 FO H15.6 V9.1  
 (RGMD46) ☐ BTWT-1431CA5 K1 FO H15.6 V9.1

BETA STAB S5-6  
 .000 1.000 20.000  
 5.000 1.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

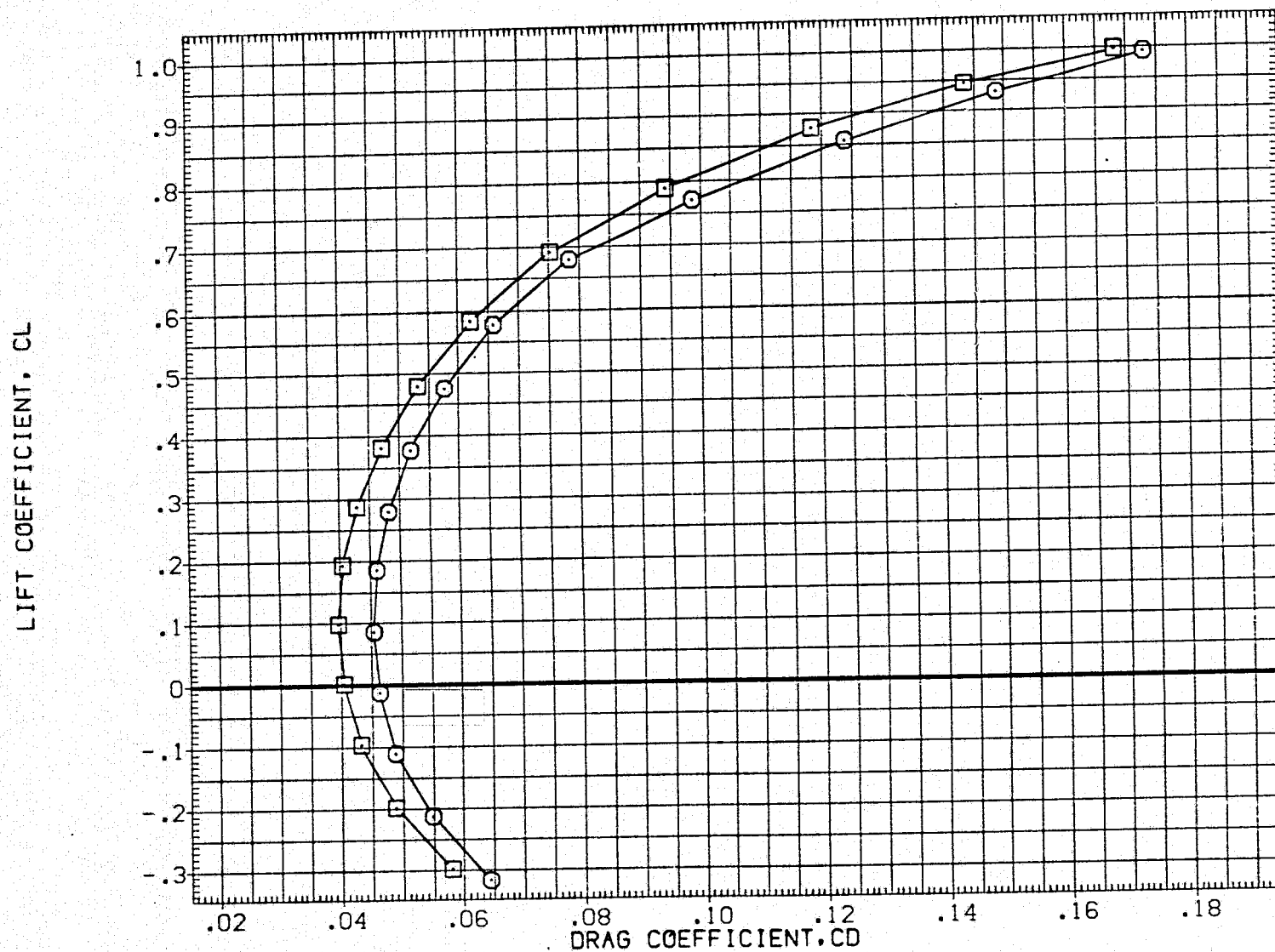


FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP  
 (B) MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD45)  $\square$  BTWT-1431CA5 K1 FO H15.6 V9.1  
 (RGMD46)  $\circ$  BTWT-1431CA5 K1 FO H15.6 V9.1

BETA STAB SS-6  
 .000 1.000 20.000  
 5.000 1.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

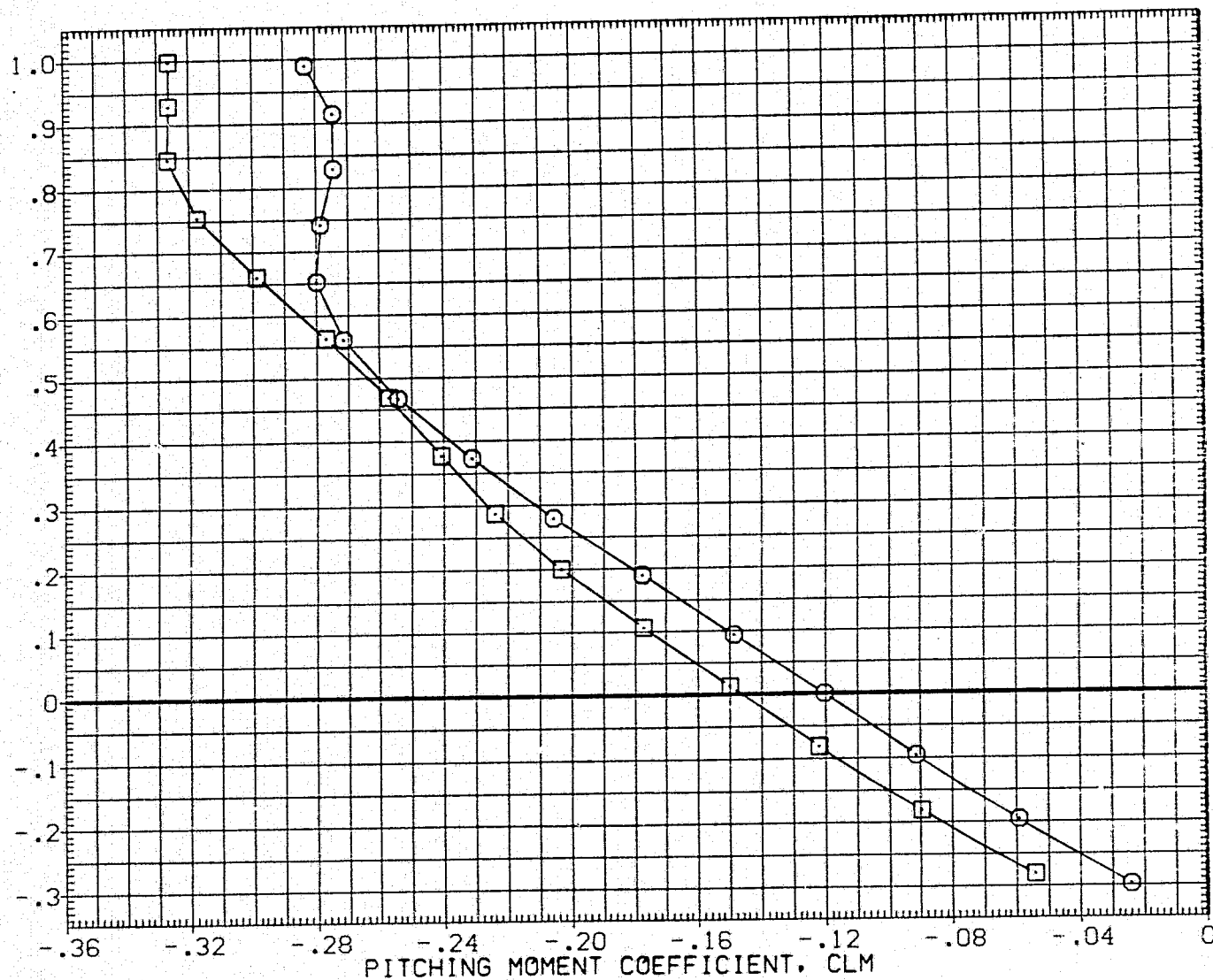


FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP

(A) MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM045) ○	BTWT-1431CA5 KI FO H15.6 V9.1
(RGM046) □	BTWT-1431CA5 KI FO H15.6 V9.1

BETA	STAB	S5-6
.000	1.000	20.000
5.000	1.000	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL



FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMD45) ○ BTWT-1431CA5 KI FO H15.6 V9.1  
 (RGMD46) □ BTWT-1431CA5 KI FO H15.6 V9.1

BETA STAB S5-6  
 .000 1.000 20.000  
 5.000 1.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

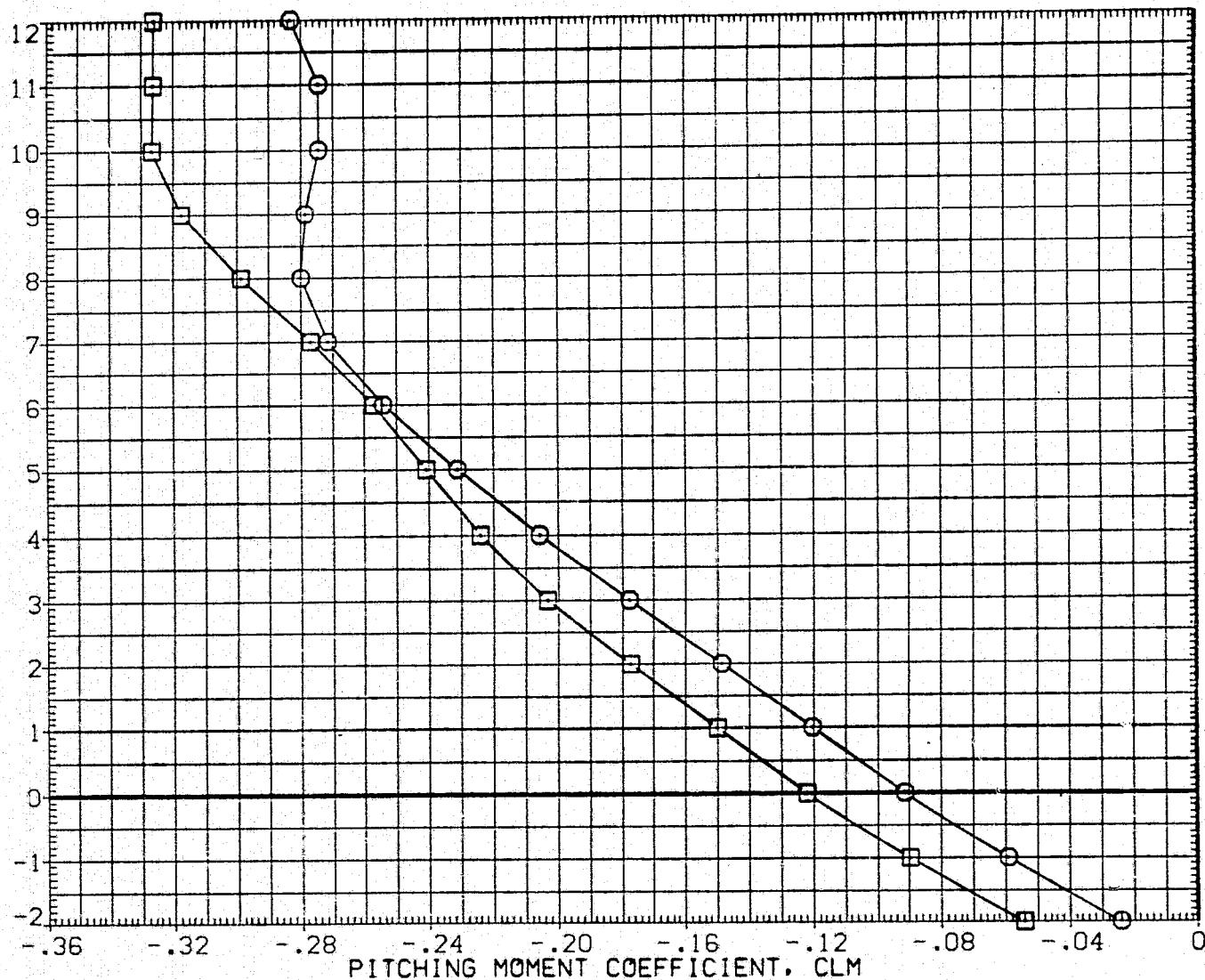


FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP

(A) MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO45) ○ BTWT-1431CAS K1 FO H15.6 V9.1  
 (RGMO46) □ BTWT-1431CAS K1 FO H15.6 V9.1

BETA STAB S5-6  
 .000 1.000 20.000  
 5.000 1.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

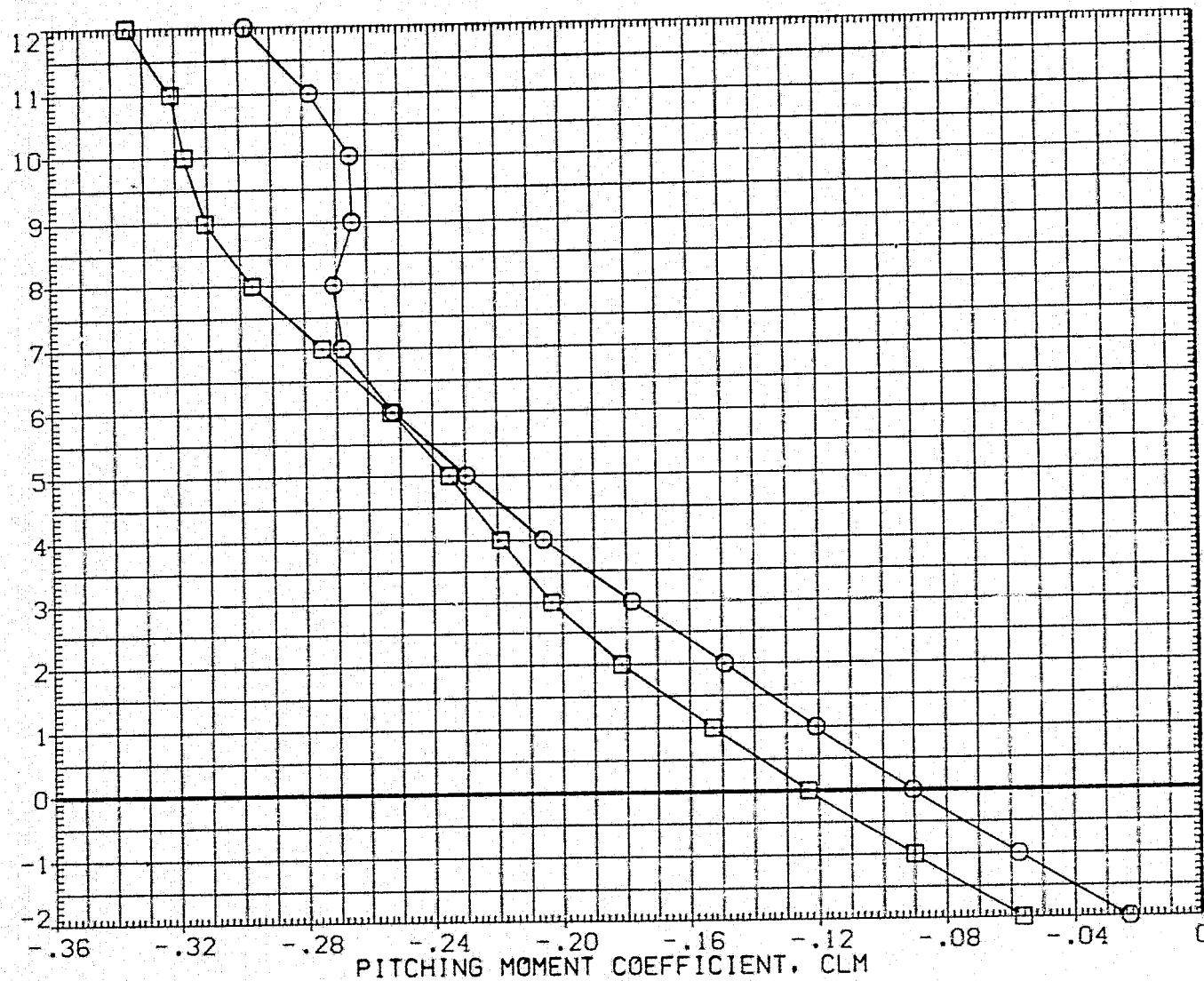


FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP  
 (B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO45) ○ BTWT-1431CA5 K1 FO H15.6 V9.1  
 (RGMO46) □ BTWT-1431CA5 K1 FO H15.6 V9.1

BETA STAB SS-6  
 .000 1.000 20.000  
 5.000 1.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

SIDE FORCE COEFFICIENT, CY

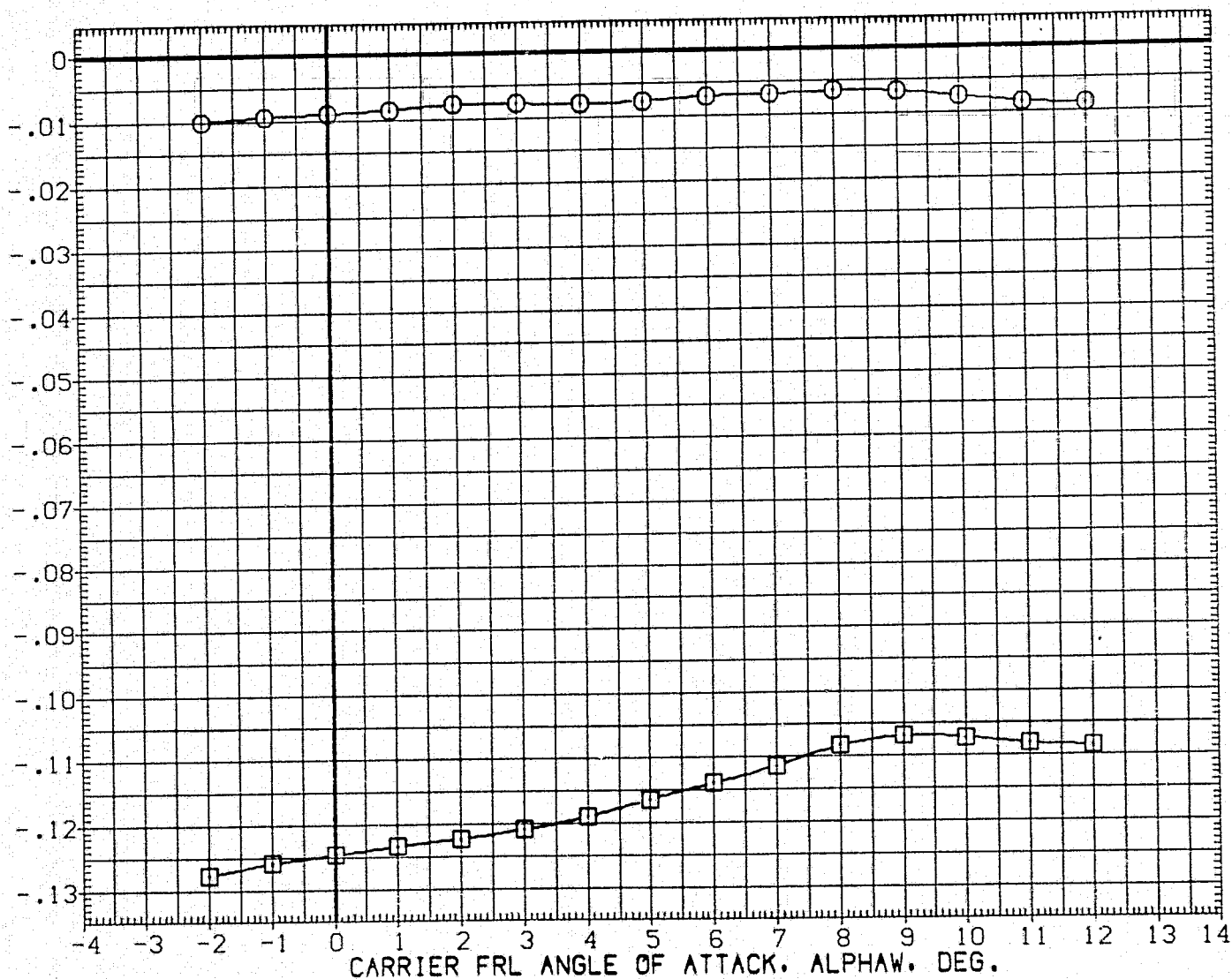


FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMD45) ○	BTWT-1431CAS K1 FO H15.6 V9.1
(RGMD46) □	BTWT-1431CAS K1 FO H15.6 V9.1

BETA	STAB	SS-6
.000	1.000	20.000
5.000	1.000	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XM RP	1339.9100	IN. XC
YM RP	.0000	IN. YC
ZM RP	190.7500	IN. ZC
SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

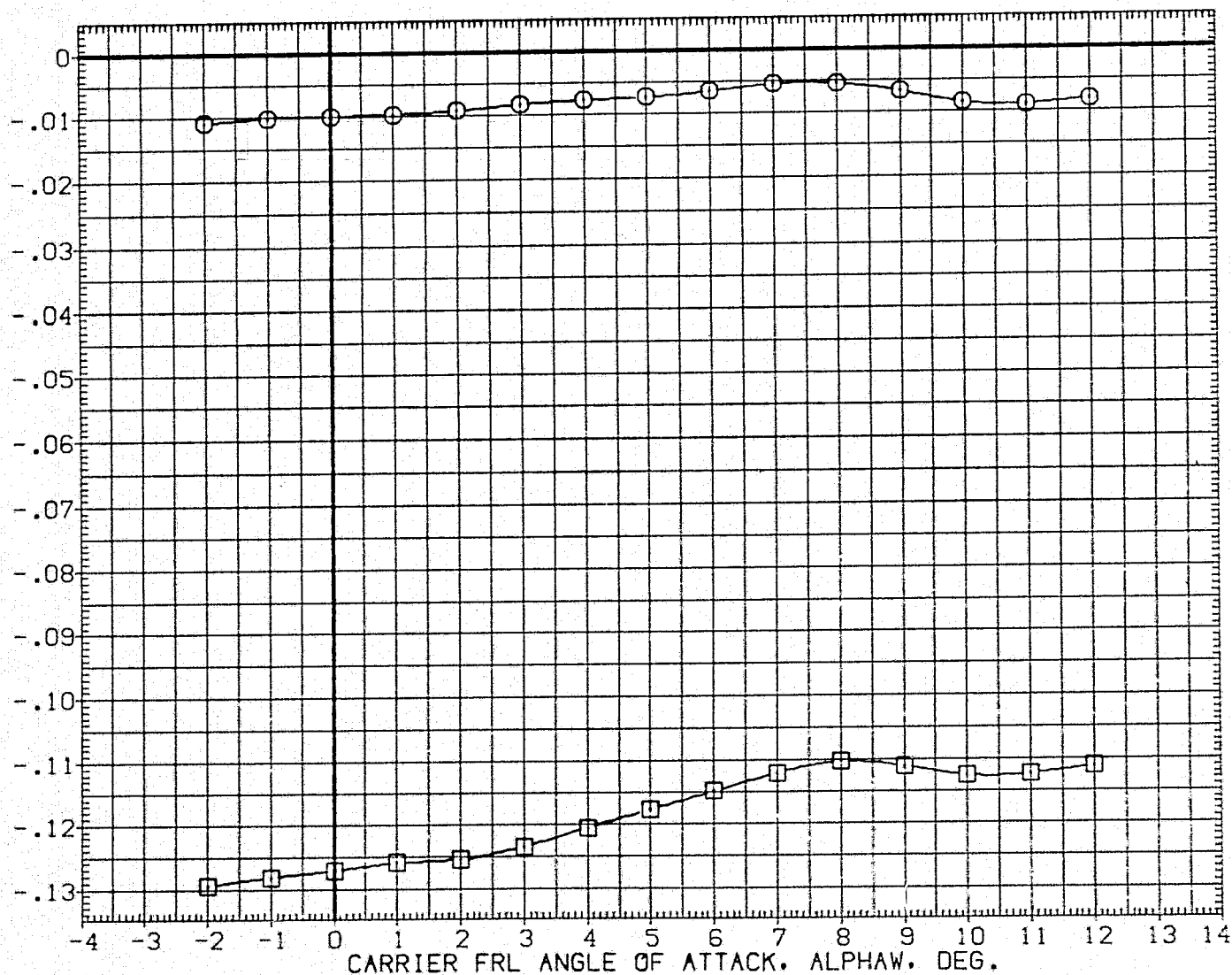


FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP  
(B)MACH = .60



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMO45) $\square$	BTWT-1431CAS KI FO H15.6 V9.1
(RGMO46) $\square$	BTWT-1431CAS KI FO H15.6 V9.1

BETA	STAB	SS-6
.000	1.000	20.000
5.000	1.000	20.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

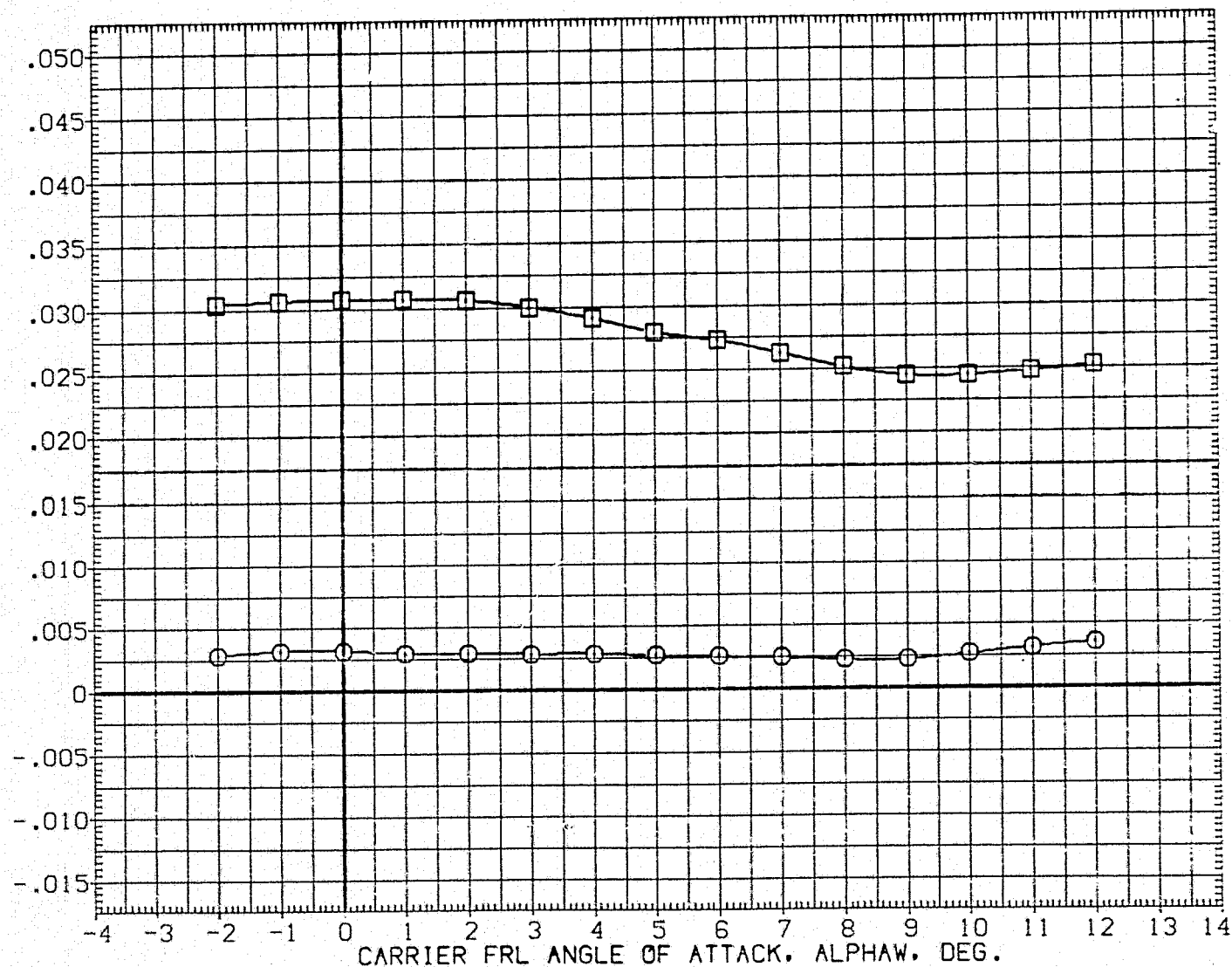


FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RSM045) BTWT-1431CA5 KI FO HIS.6 V9.1  
 (RSM046) BTWT-1431CA5 KI FO HIS.6 V9.1

BETA STAB SS-6  
 .000 1.000 20.000  
 5.000 1.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YCC  
 ZMRP 190.7500 IN. ZCC  
 SCALE .0300

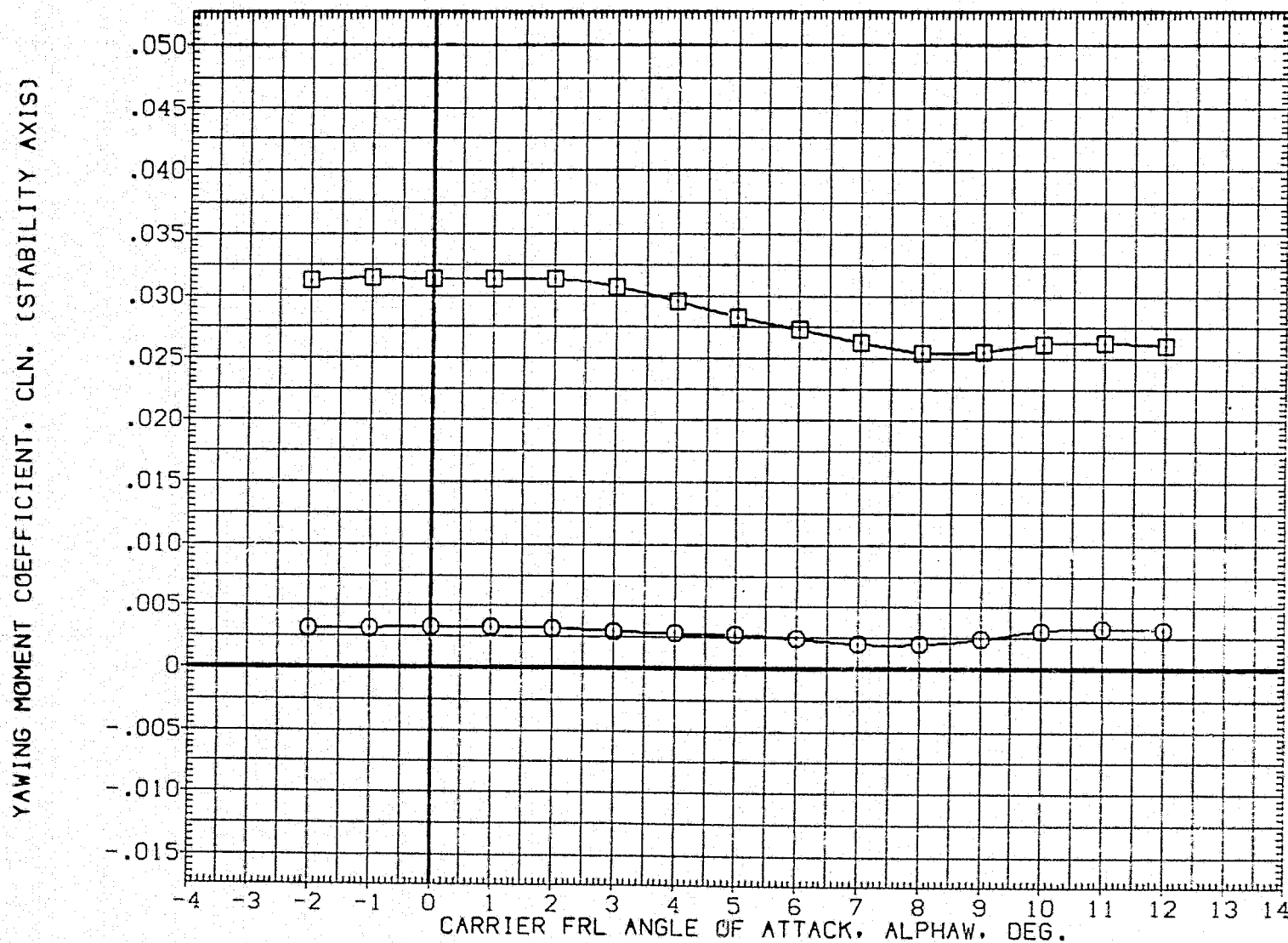


FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM045) ○	BTWT-1431CA5 K1 FO H15.6 V9.1
(RGM046) □	BTWT-1431CA5 K1 FO H15.6 V9.1

BETA	STAB	S5-6
.000	1.000	20.000
5.000	1.000	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

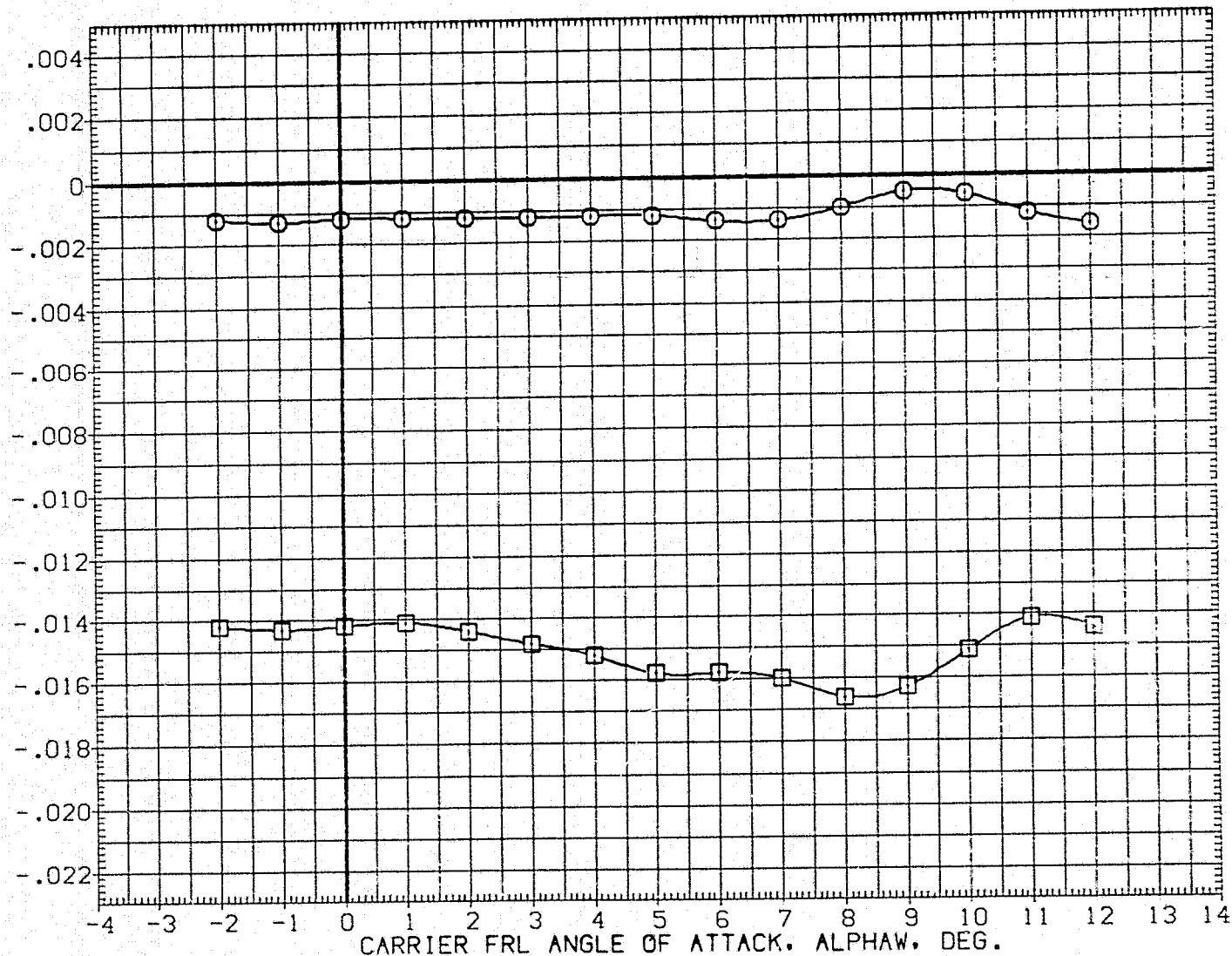


FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (R3MD45)  $\square$  BTWT-1431CA5 K1 FO H15.6 V9.1  
 (R5MD46)  $\square$  BTWT-1431CA5 K1 FO H15.6 V9.1

BETA STAB SS-6  
 .000 1.000 20.000  
 5.000 1.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

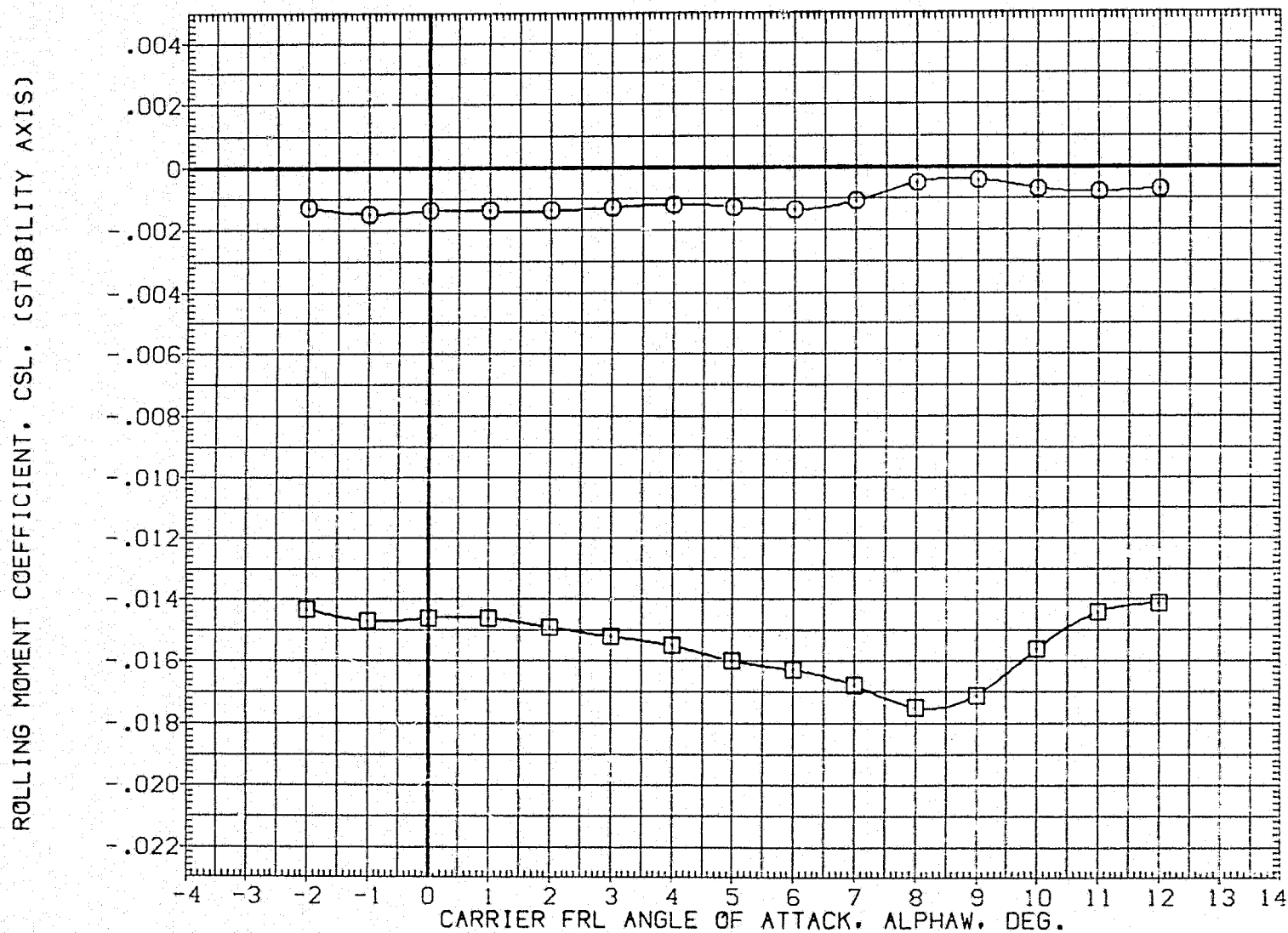


FIG. 234 747 ALONE, EFFECT OF 5 DEG SIDESLIP, FLAPS UP

(B) MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMD45) ○	BTWT-1431CA5 K1 FO H15.6 V9.1
(RGMD49) □	BTWT-1431CA5 K1 FO H15.6 V9.1

STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION	
1.000	.000	.000	20.000	SREF	5500.0000 SQ.FT.
1.000	15.000	15.000	20.000	LREF	327.8000 IN.
				BREF	2348.0000 IN.
				XMRP	1339.9100 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

LIFT COEFFICIENT, CL

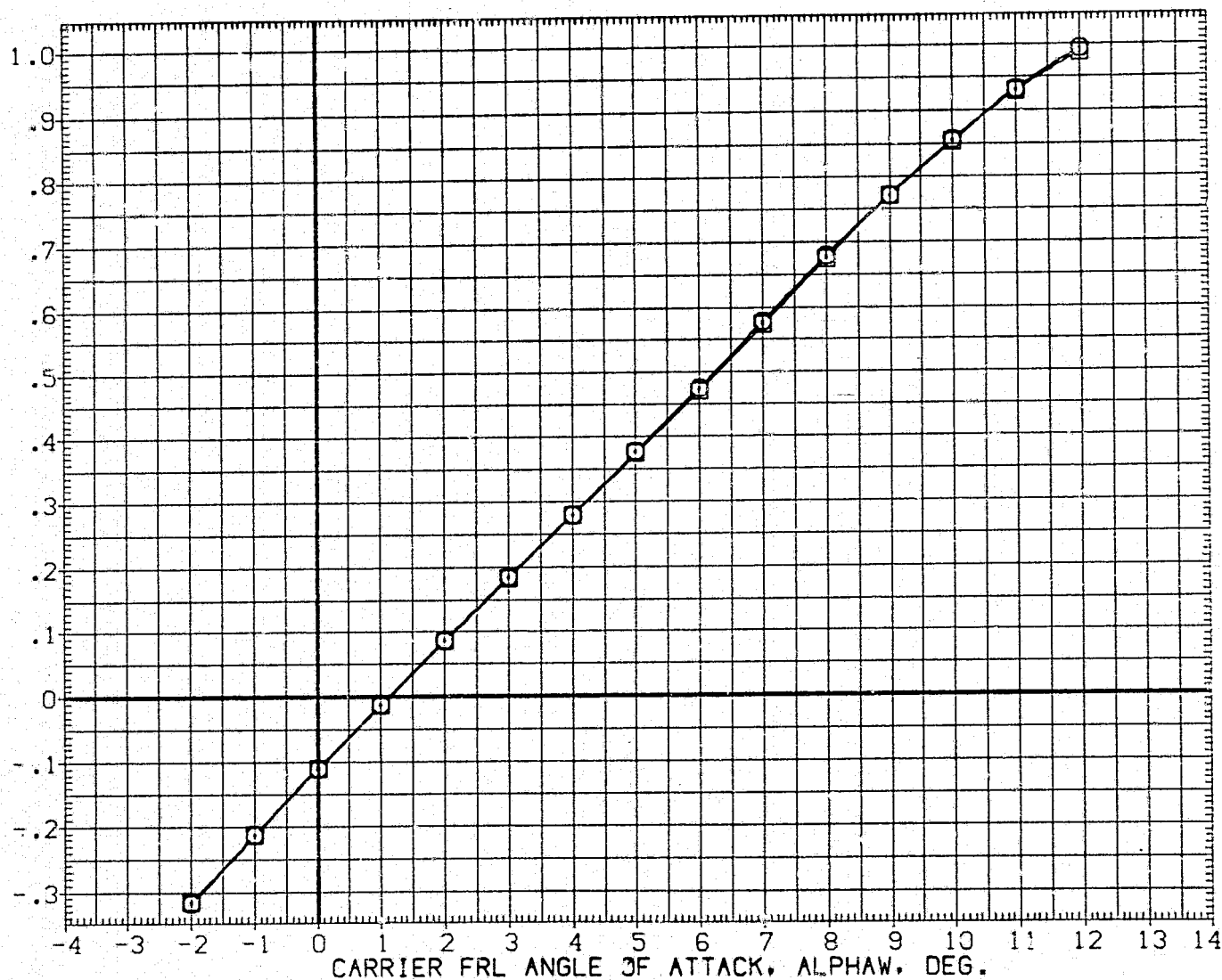


FIG. 235 747 ALONE, RUDDER EFFECT (BETA=0), FLAPS UP  
(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (R3M045)  $\square$  BTWT-1431CA5 K1 FO H15.6 V9.1  
 (R6M049)  $\square$  BTWT-1431CA5 K1 FO H15.6 V9.1

STAB	RUD-U	RUD-L	S5-6
1.000	.000	.000	20.000
1.000	15.000	15.000	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

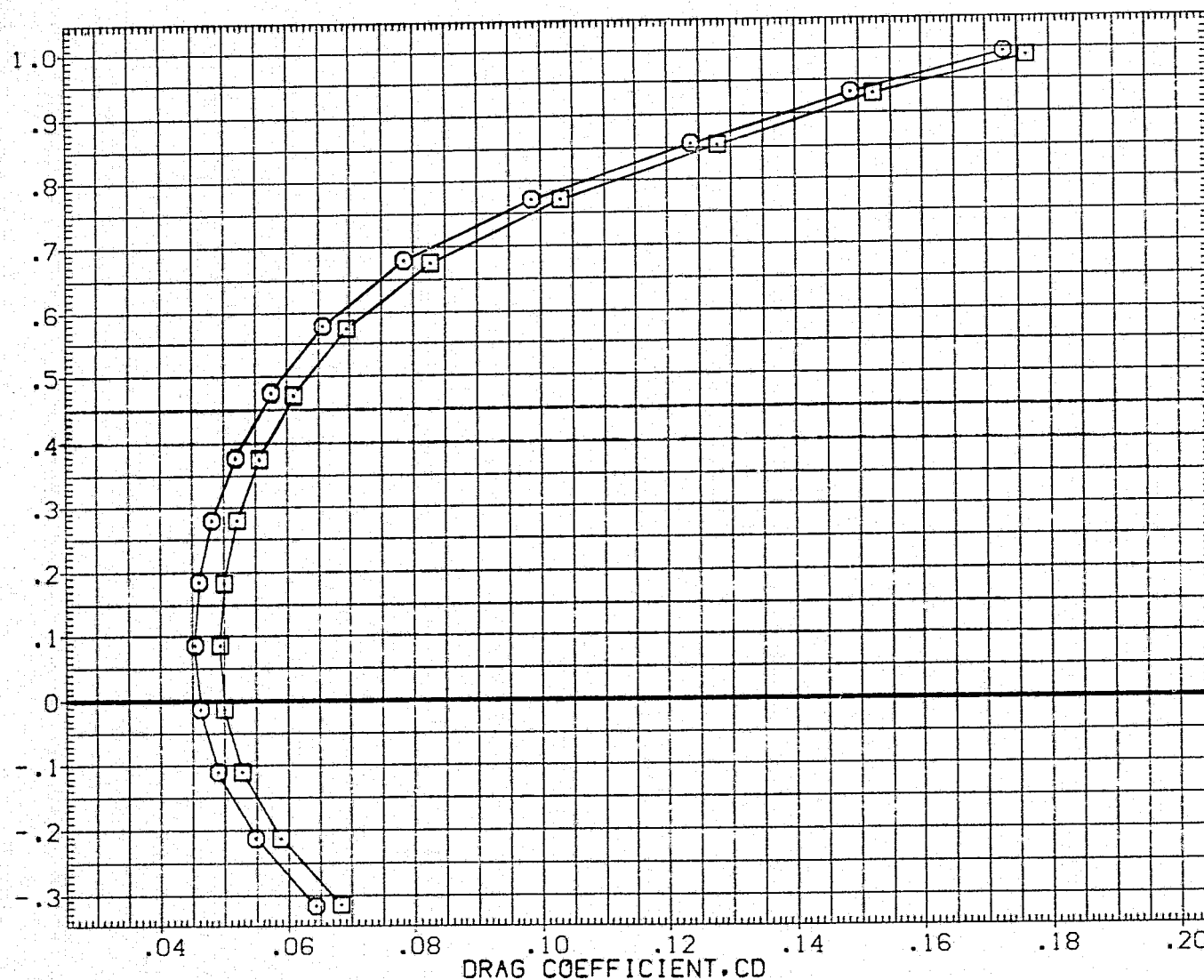


FIG. 235 747 ALONE, RUDDER EFFECT(BETA=0), FLAPS UP  
 (A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMD45) ○	BTWT-1431CA5 KI FO H15.6 V9.1
(RGMD49) □	BTWT-1431CA5 KI FO H15.6 V9.1

STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION	
1.000	.000	.000	20.000	SREF	5500.0000 SQ. FT.
1.000	15.000	15.000	20.000	LREF	327.8000 IN.
				BREF	2348.0000 IN.
				XMRP	1339.9100 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

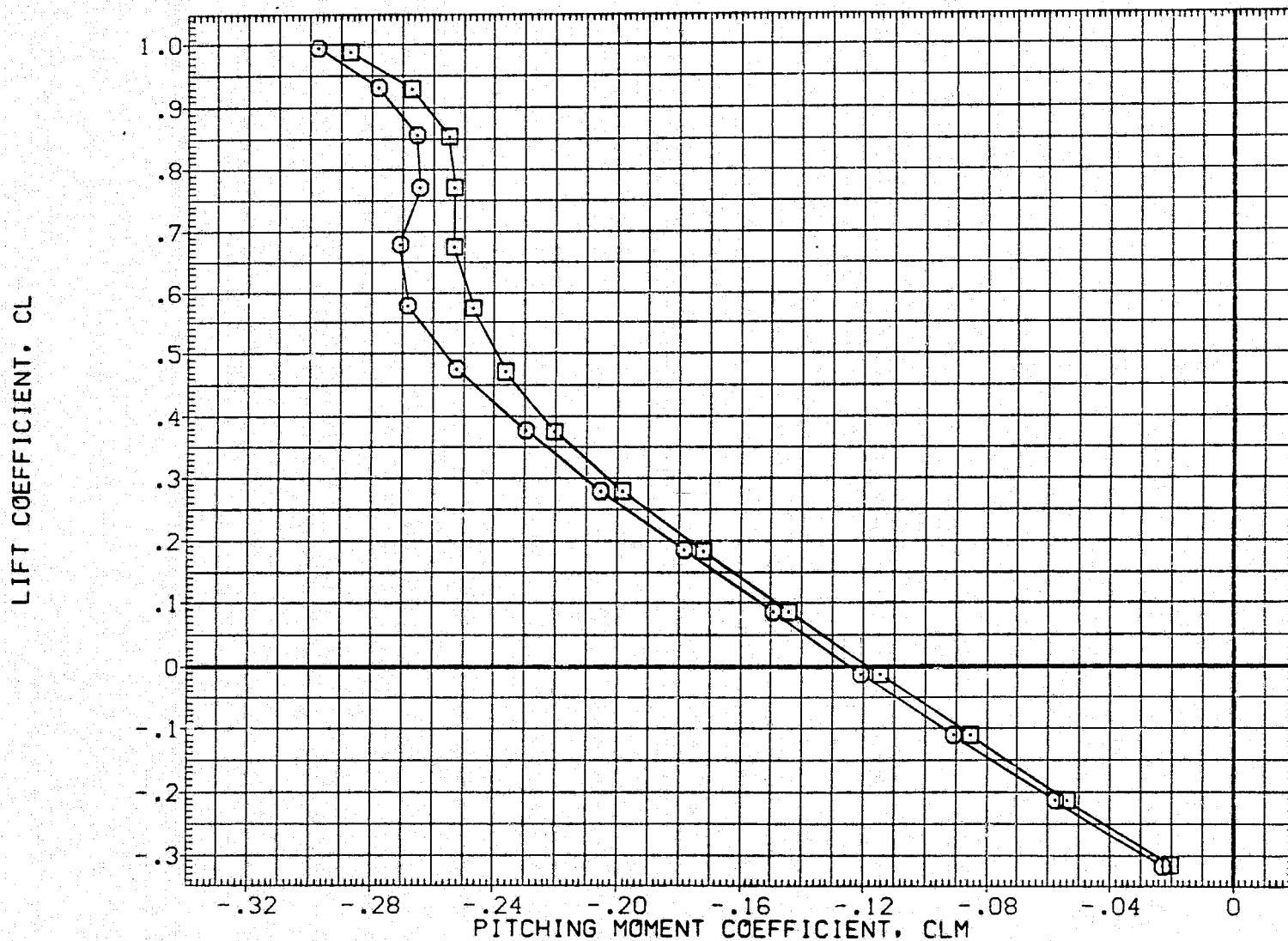


FIG. 235 747 ALONE, RUDDER EFFECT(BETA=0), FLAPS UP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM045) ○ BTWT-1431CA5 K1 FO H15.6 V9.1  
 (RGM049) □ BTWT-1431CA5 K1 FO H15.6 V9.1

STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
1.000	.000	.000	20.000	SREF	5500.0000	SS.FT.
1.000	15.000	15.000	20.000	LREF	327.8000	IN.
				BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

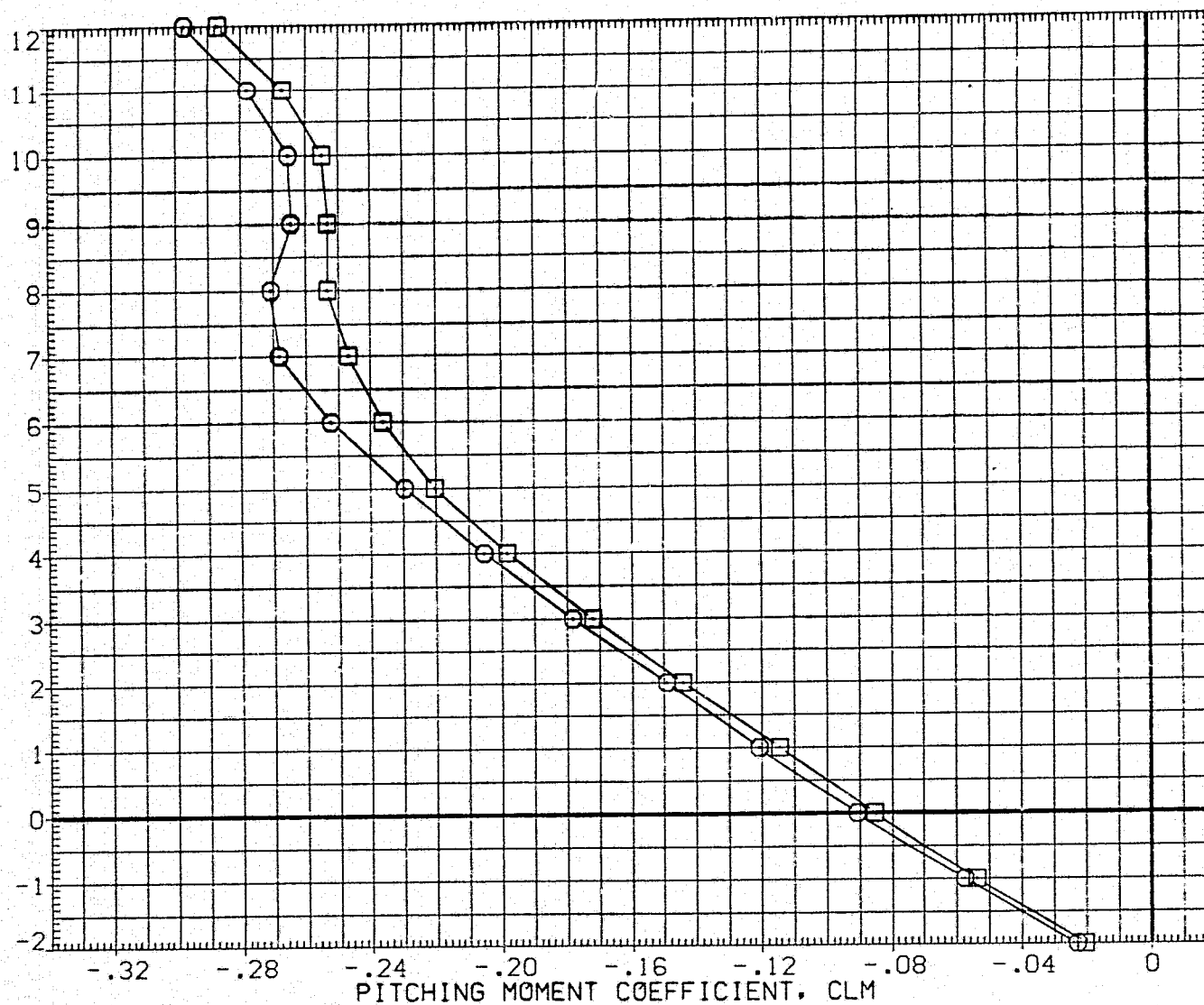


FIG. 235 747 ALONE, RUDDER EFFECT(BETA=0), FLAPS UP

(A)MACH = .60



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO45) □ BTWT-1431CA5 KI FO H15.6 V9.1  
 (RGMO49) □ BTWT-1431CA5 KI FO H15.6 V9.1

STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
1.000	.000	.000	20.000	SREF	5500.0000	SQ.FT.
1.000	15.000	15.000	20.000	LREF	327.8000	IN.
				BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

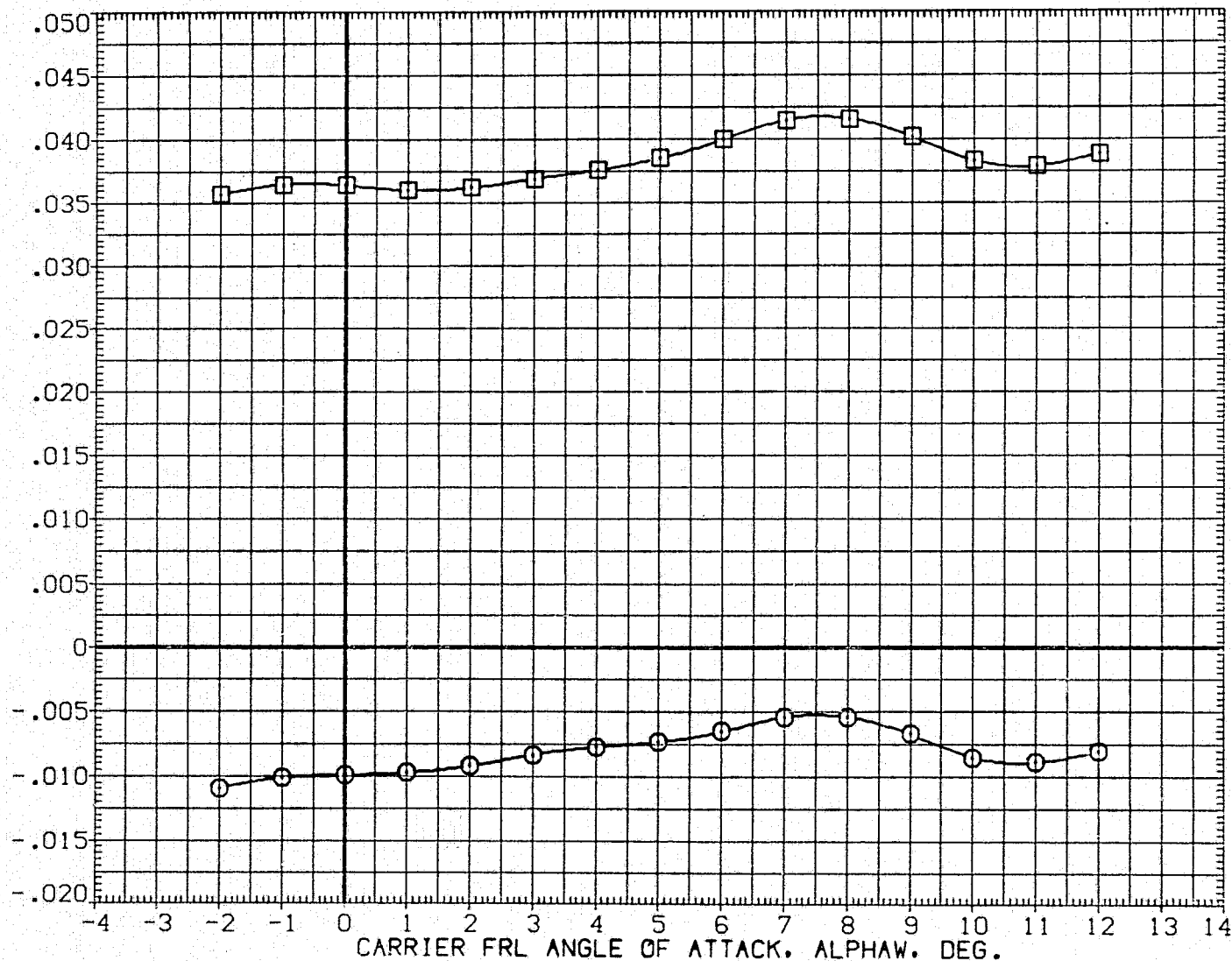




FIG. 235 747 ALONE, RUDDER EFFECT(BETA=0), FLAPS UP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM045)  BTWT-1431CAS K1 FO H15.6 V9.1  
 (RGM049)  BTWT-1431CAS K1 FO H15.6 V9.1

STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
1.000	.000	.000	20.000	SREF	5500.0000	SG.FT.
1.000	15.000	15.000	20.000	LREF	327.8000	IN.
				BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

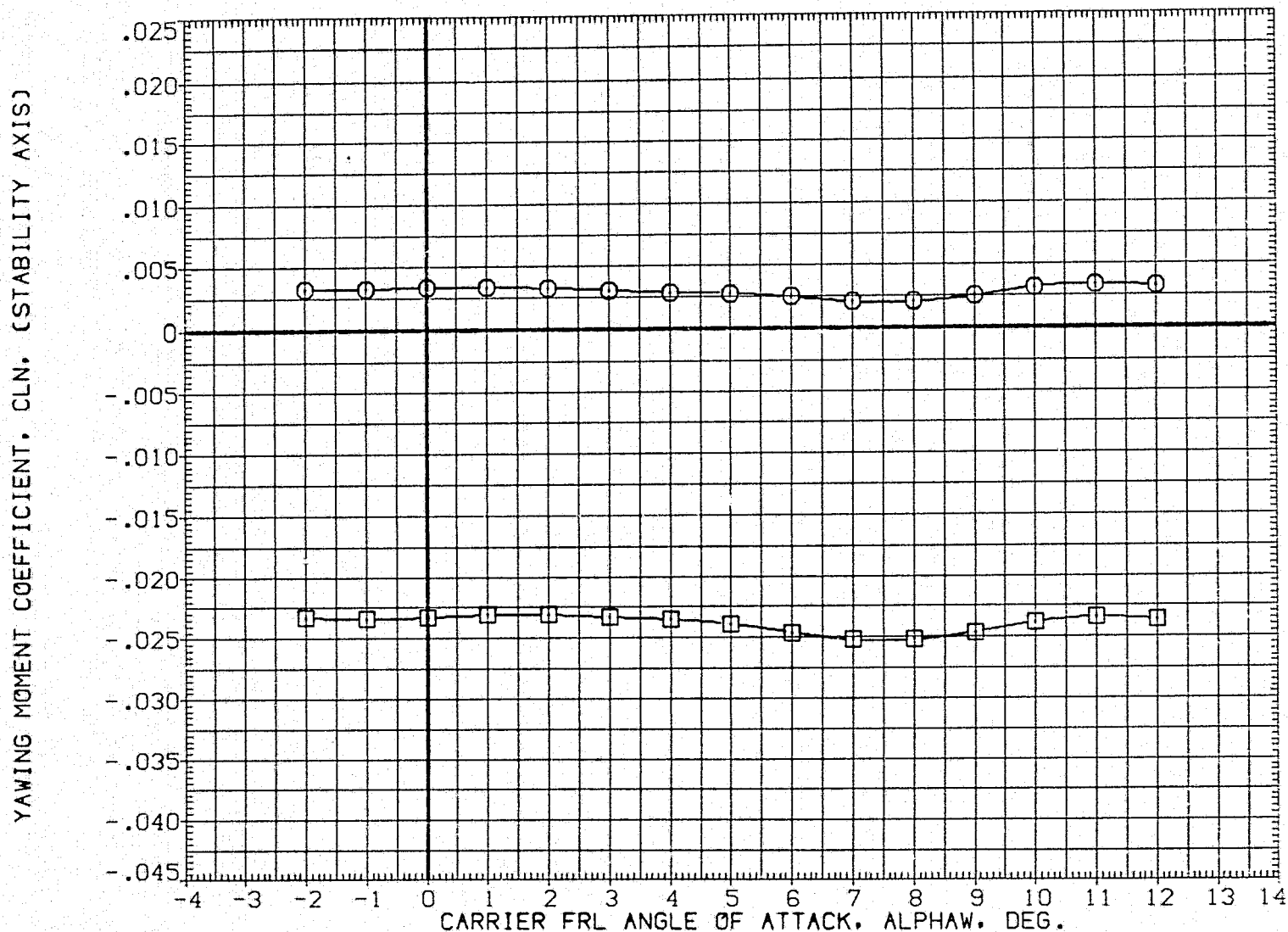


FIG. 235 747 ALONE, RUDDER EFFECT(BETA=0), FLAPS UP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGMO45) ☐ BTWT-1431CAS KI FO HIS.6 V9.1  
 (RGMO49) ☐ BTWT-1431CAS KI FO HIS.6 V9.1

STAB RUD-U RUD-L SS-6  
 1.000 .000 .000 20.000  
 1.000 15.000 15.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

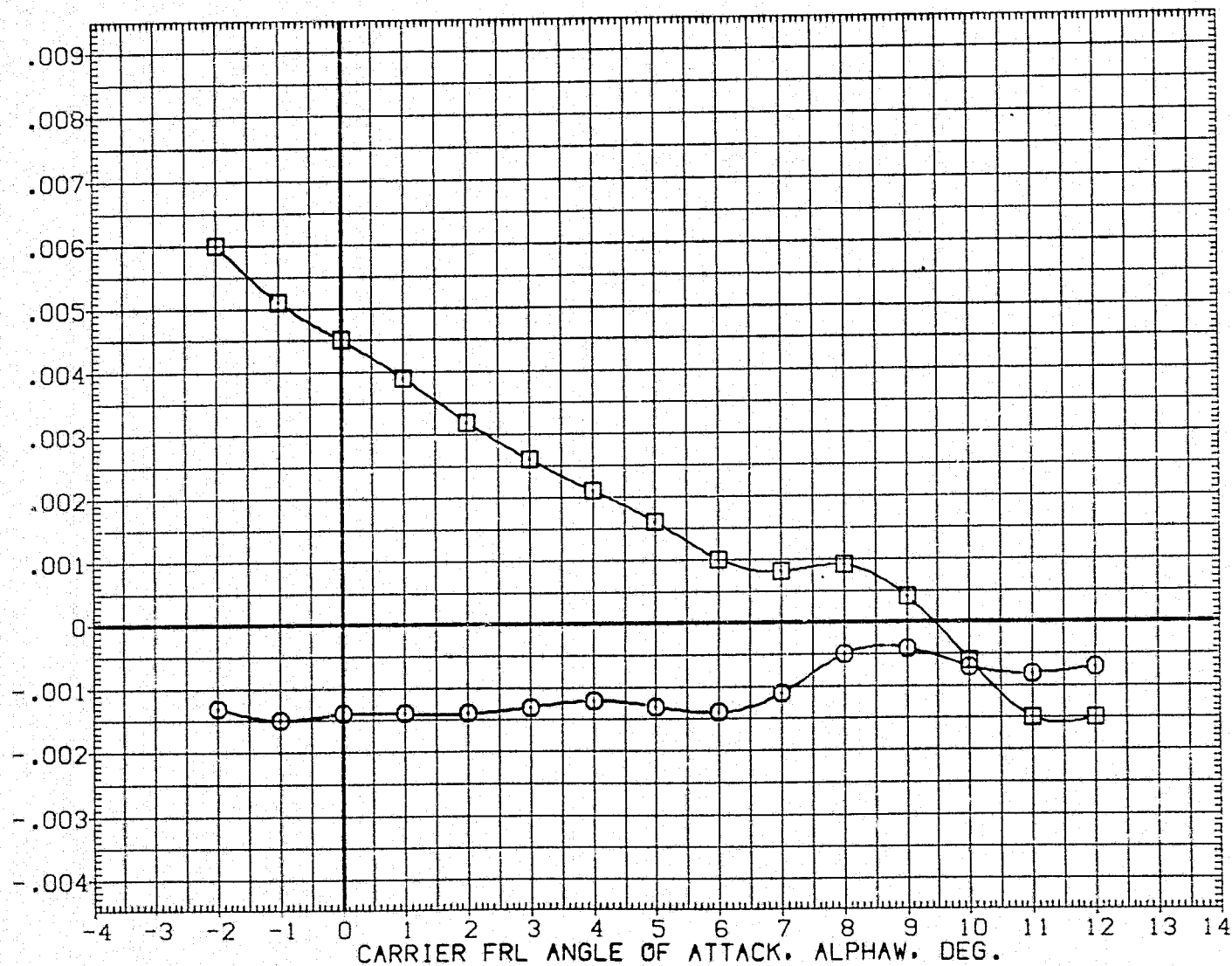


FIG. 235 747 ALONE, RUDDER EFFECT(BETA=0), FLAPS UP

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-18	ELV-08	SS-6	REFERENCE INFORMATION		
(RGM081)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	SO. FT.
(RGM085)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

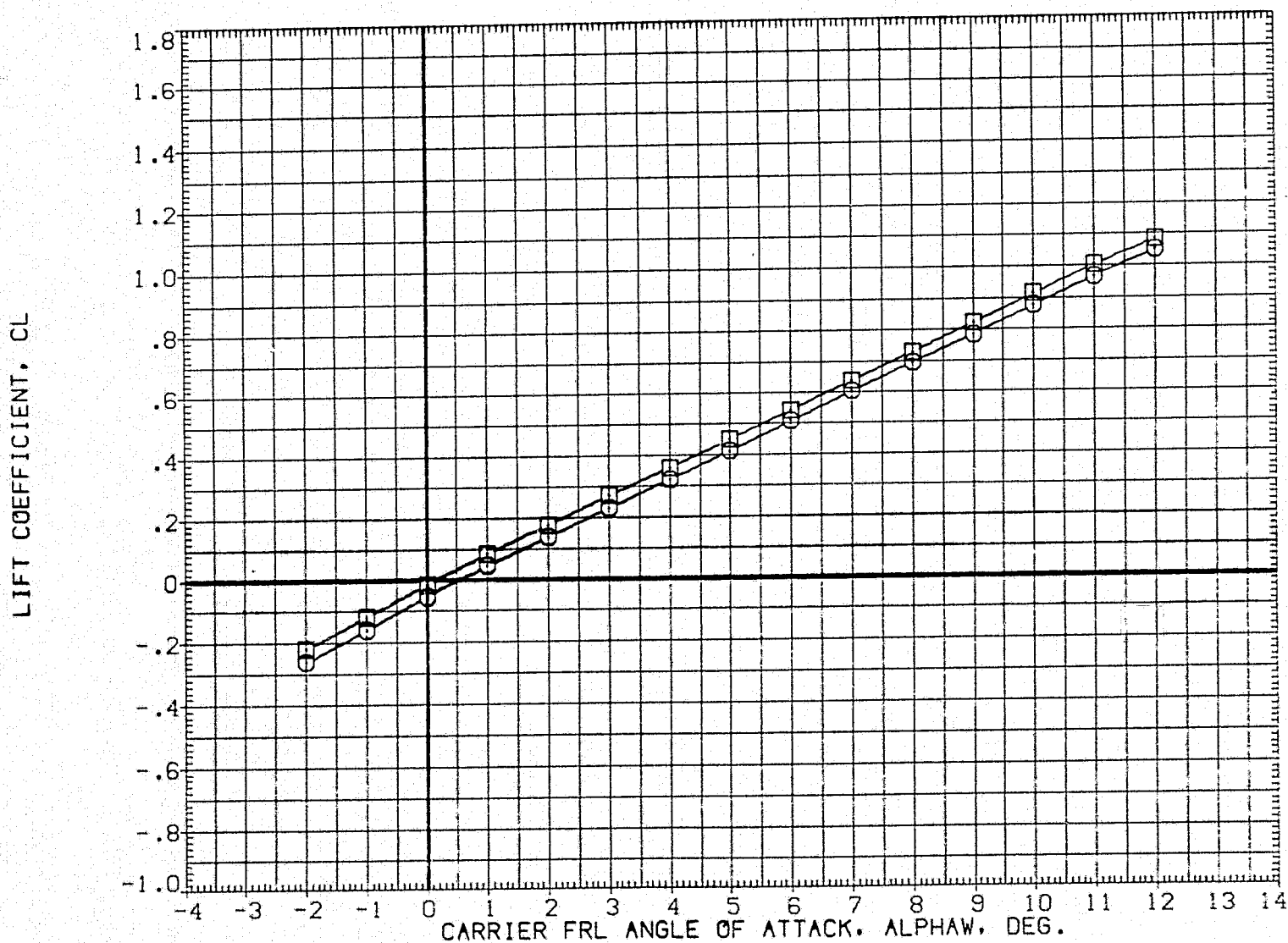


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH

(A) MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION		
(RGM081)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	SQ.FT.
(RGM085)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XM RP	1339.9100	IN. XC
						YM RP	.0000	IN. YC
						ZM RP	190.7500	IN. ZC
						SCALE	.0300	

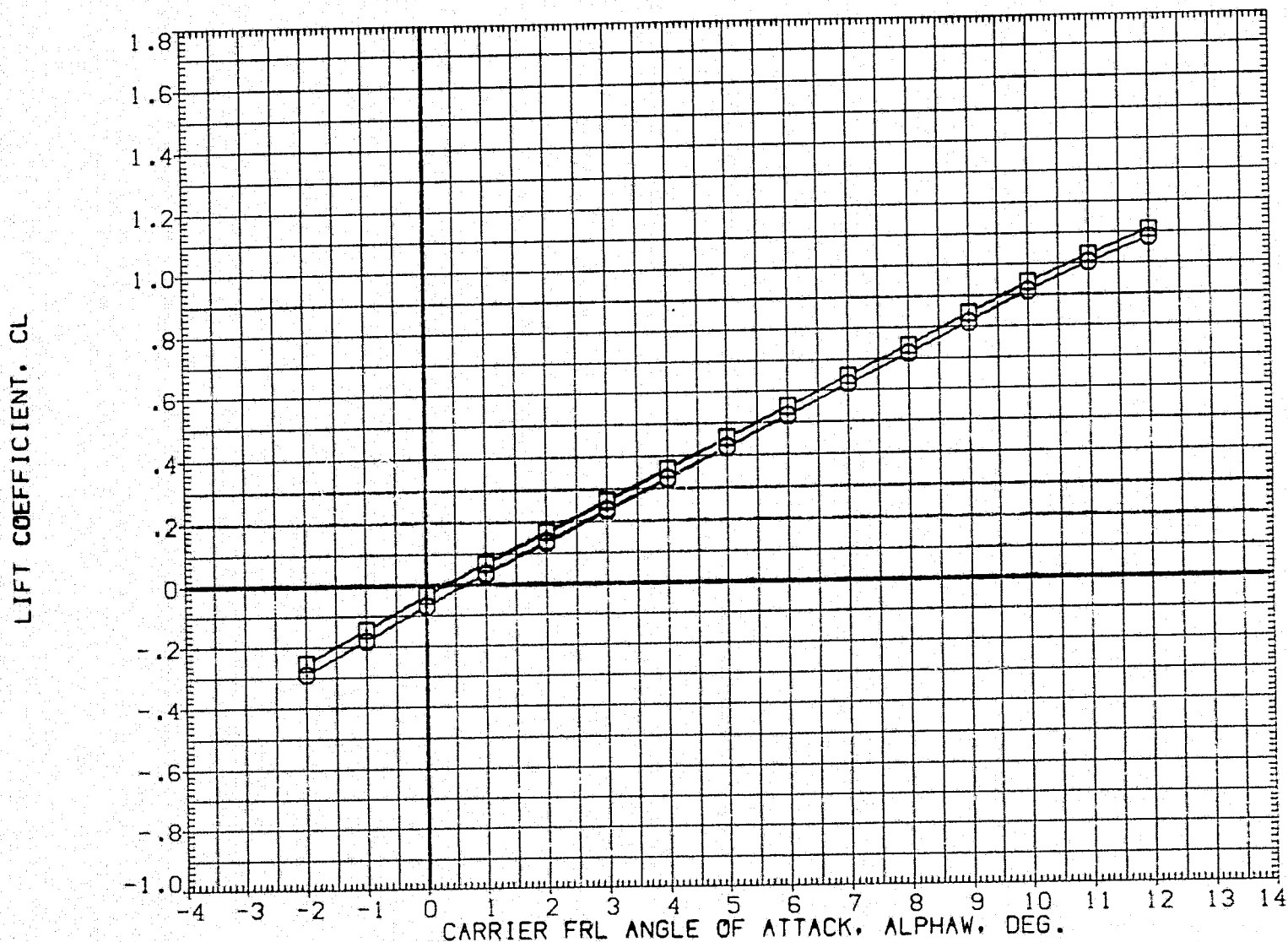


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH

(B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )  
 (RGM085)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

STAB

ELV-IB

ELV-OB

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

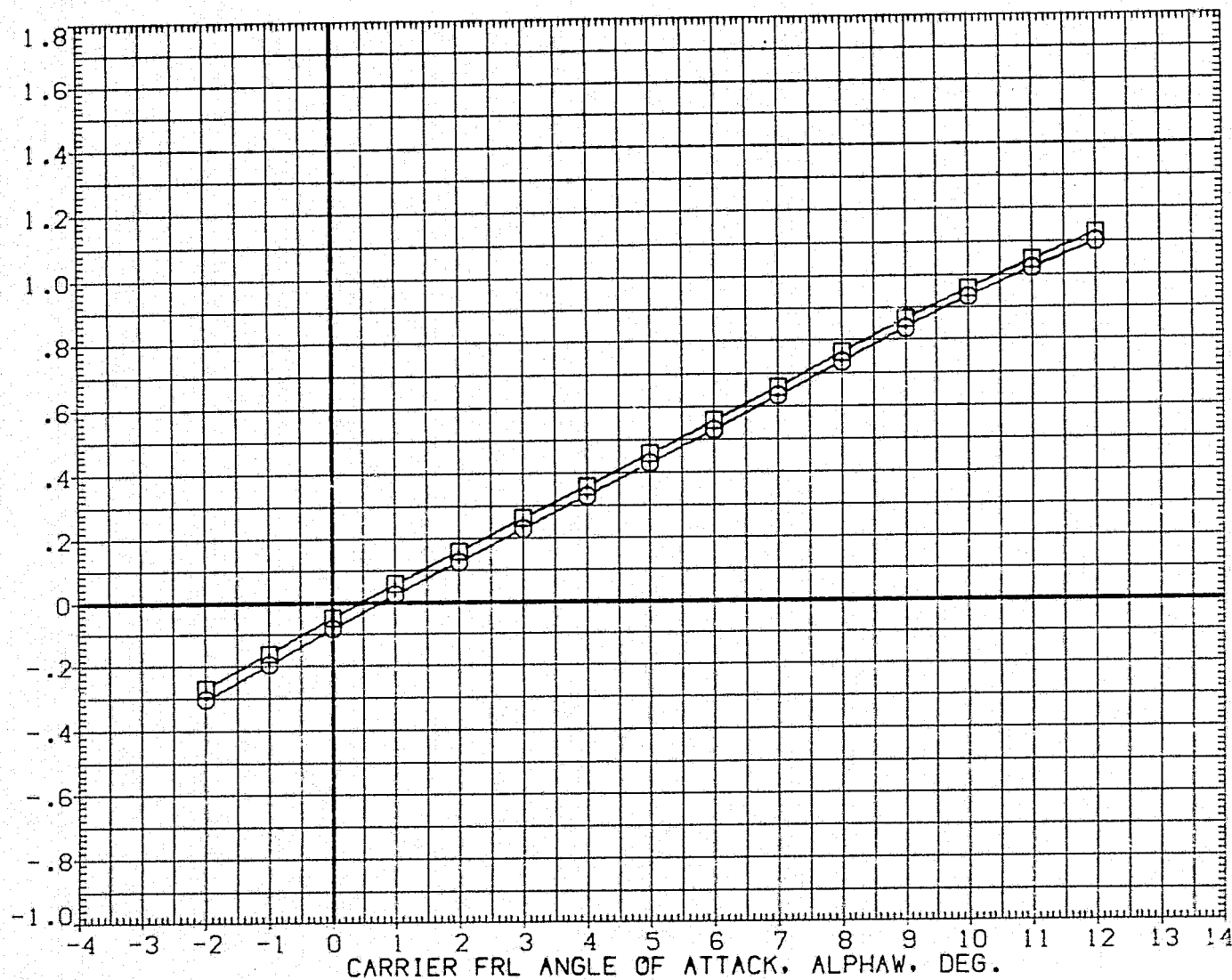


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-18	ELV-08	SS-6	REFERENCE INFORMATION		
(RGM081)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	SQ.FT.
(RGM085)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

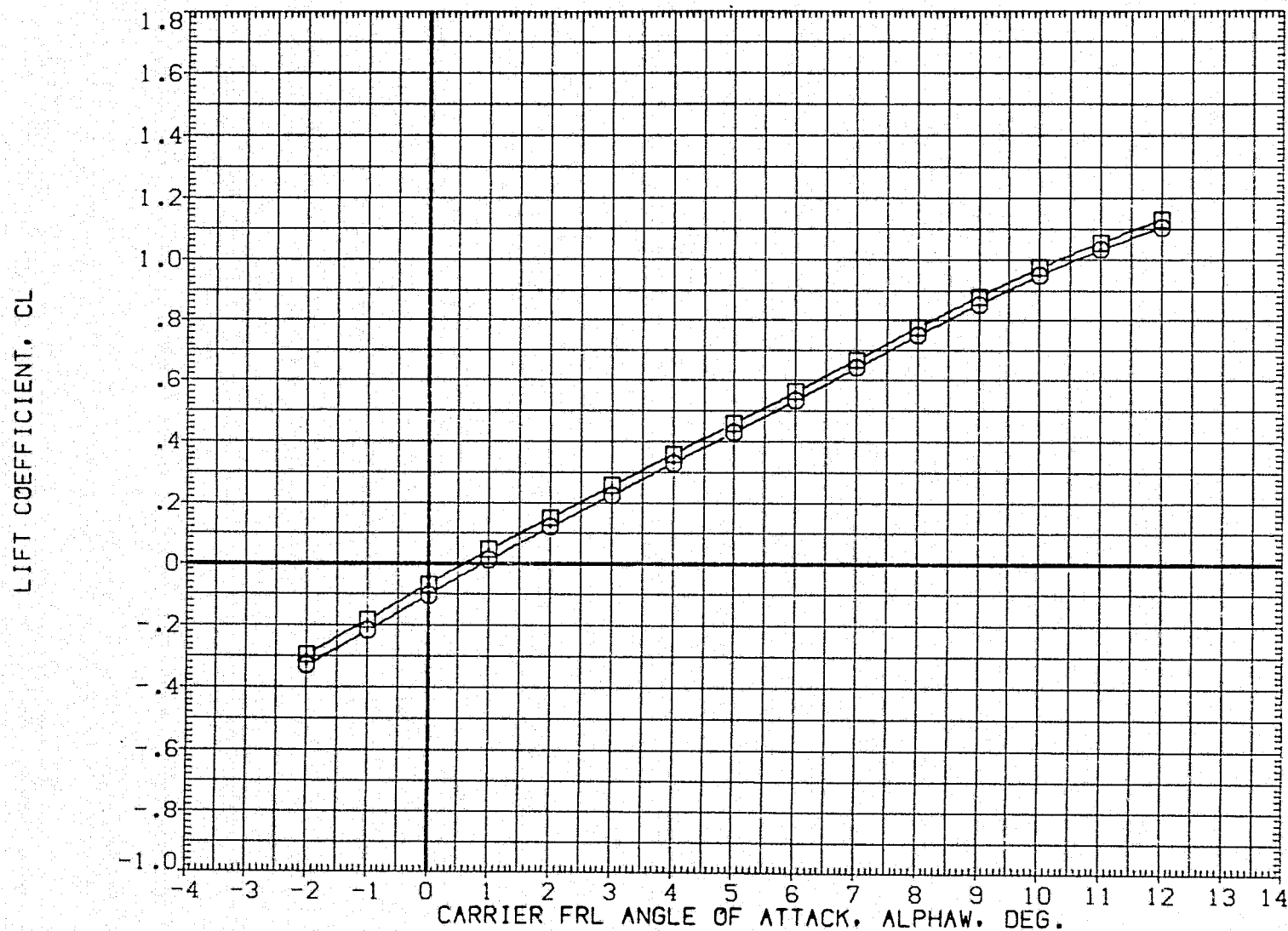


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION		
(RGM081)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	50. FT.
(RGM085)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	10.000	13.000	20.000	LREF	227.8000	IN.
						BREF	2348.0000	IN.
						XMRF	1339.9100	IN. XC
						YMRF	.0000	IN. YC
						ZMRF	190.7500	IN. ZC
						SCALE	.0300	

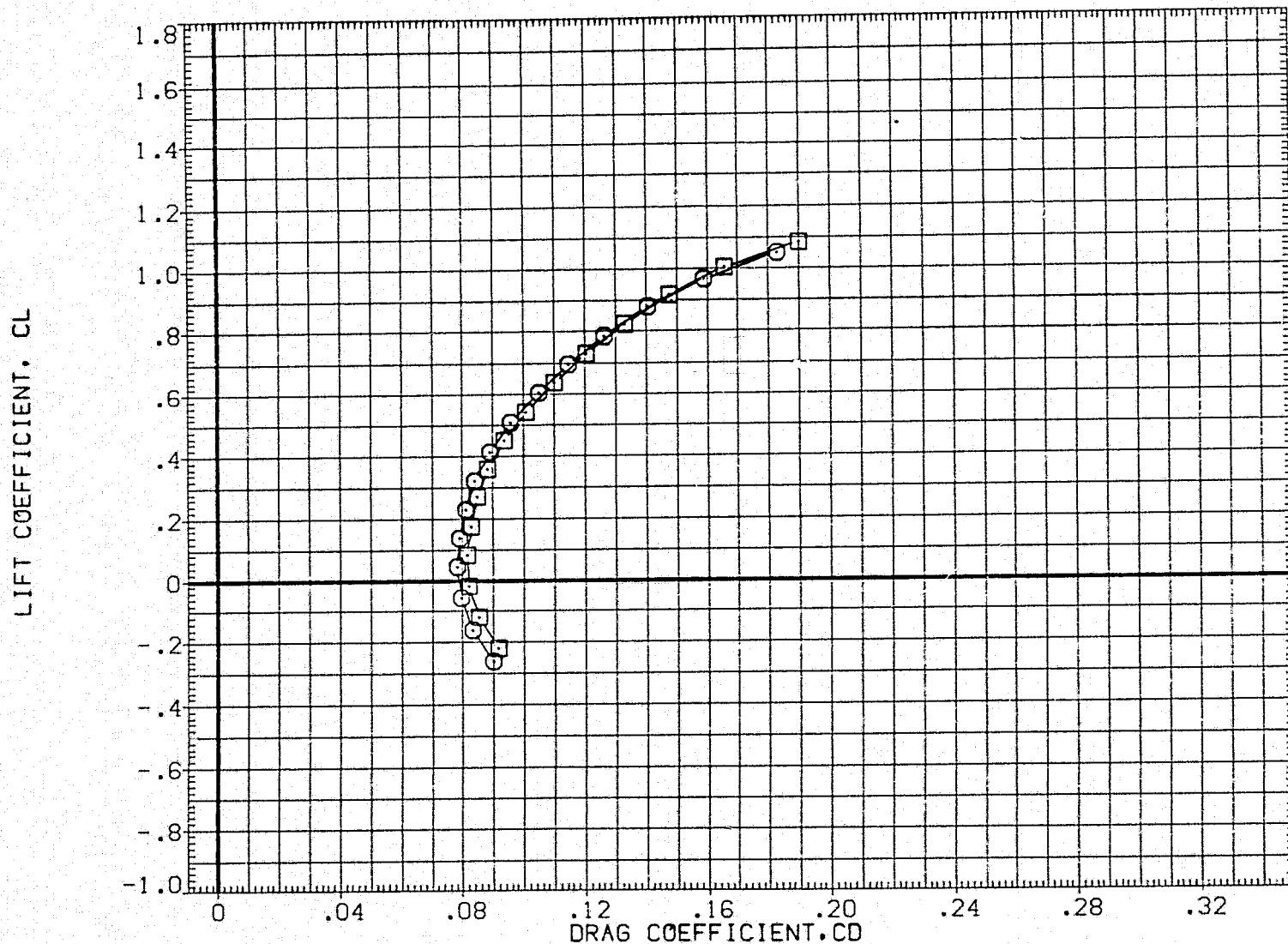


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH  
(A)MACH = .30



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION		
(RGM081)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	50. FT.
(RGM085)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

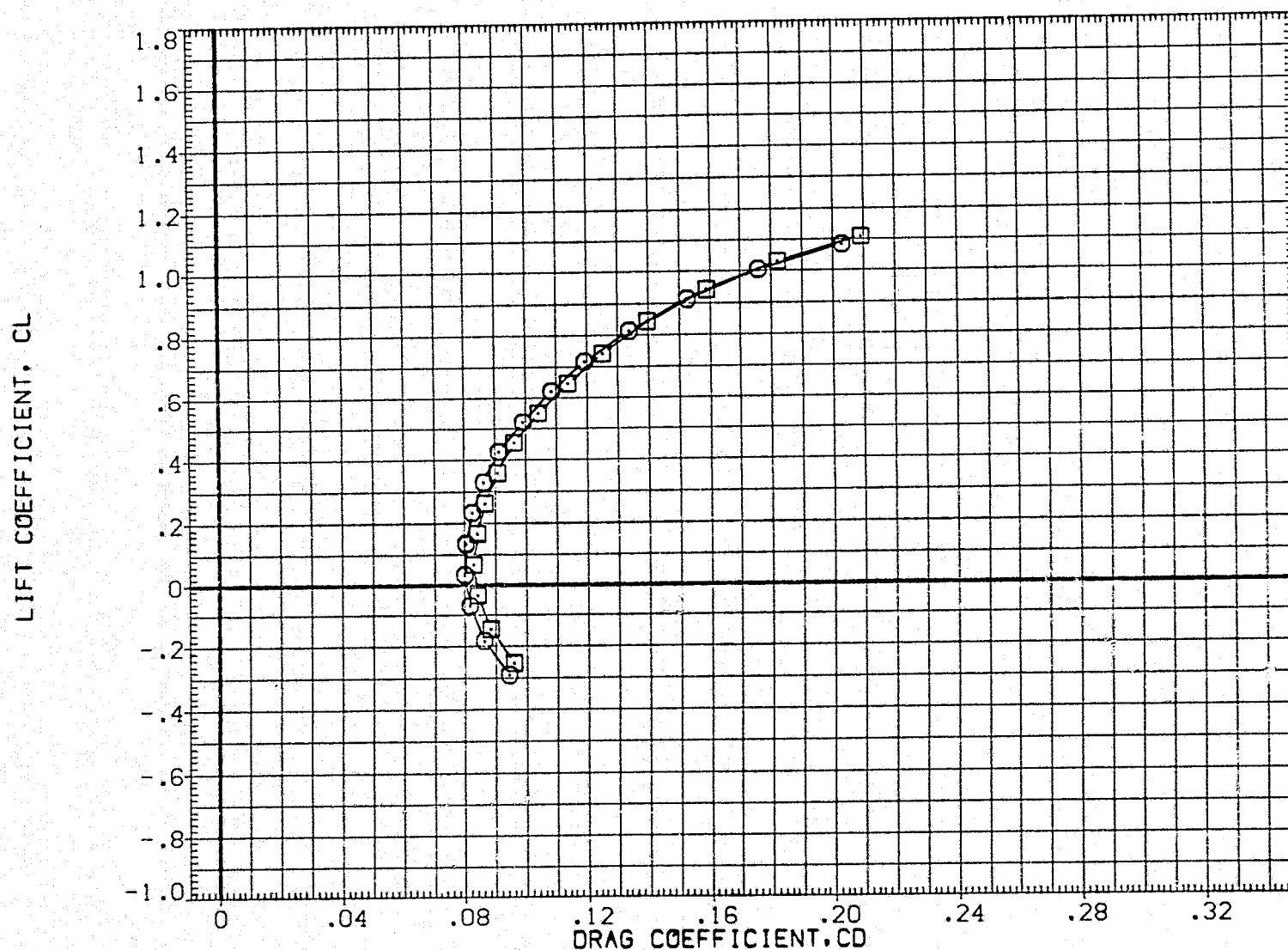


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH  
(B)MACH = .50

DATA SET SYMBOL		CONFIGURATION DESCRIPTION					STAB	ELV-18	ELV-08	SS-6	REFERENCE INFORMATION			
(RGM081)	○	CAS	KI	FO	H15.6	V9.1	(PLUS. ORB TC5 AT38.2)	1.000	.000	3.000	20.000	SREF	5500.0000	50.FT.
(RGM085)	□	CAS	KI	FO	H15.6	V9.1	(PLUS. ORB TC5 AT38.2)	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
												BREF	2348.0000	IN.
												XMRP	1339.9100	IN. XC
												YMRP	.0000	IN. YC
												ZMRP	190.7500	IN. ZC
												SCALE	.0300	

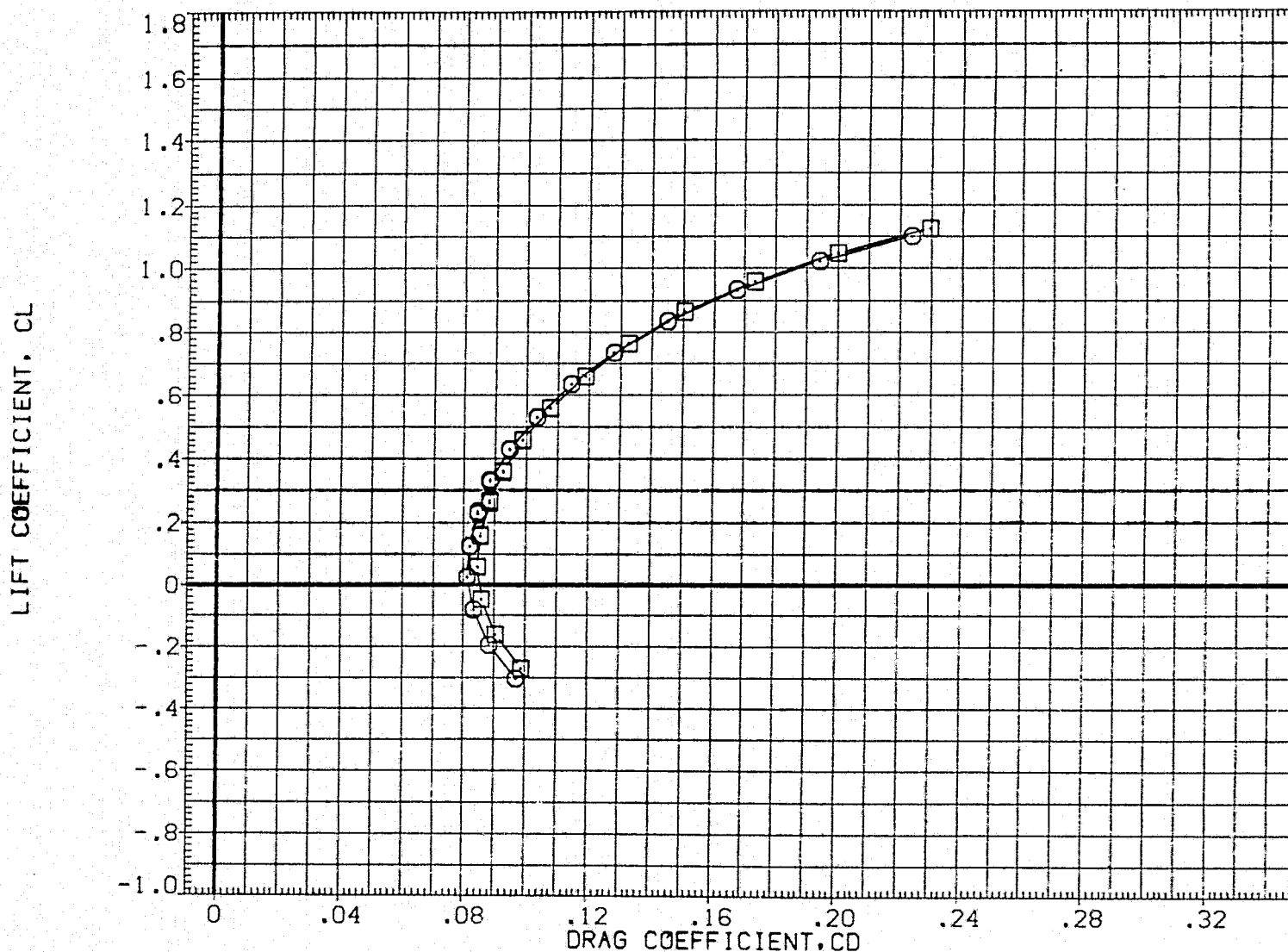


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH  
(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
(RGM081)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	SQ.FT.
(RGM085)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

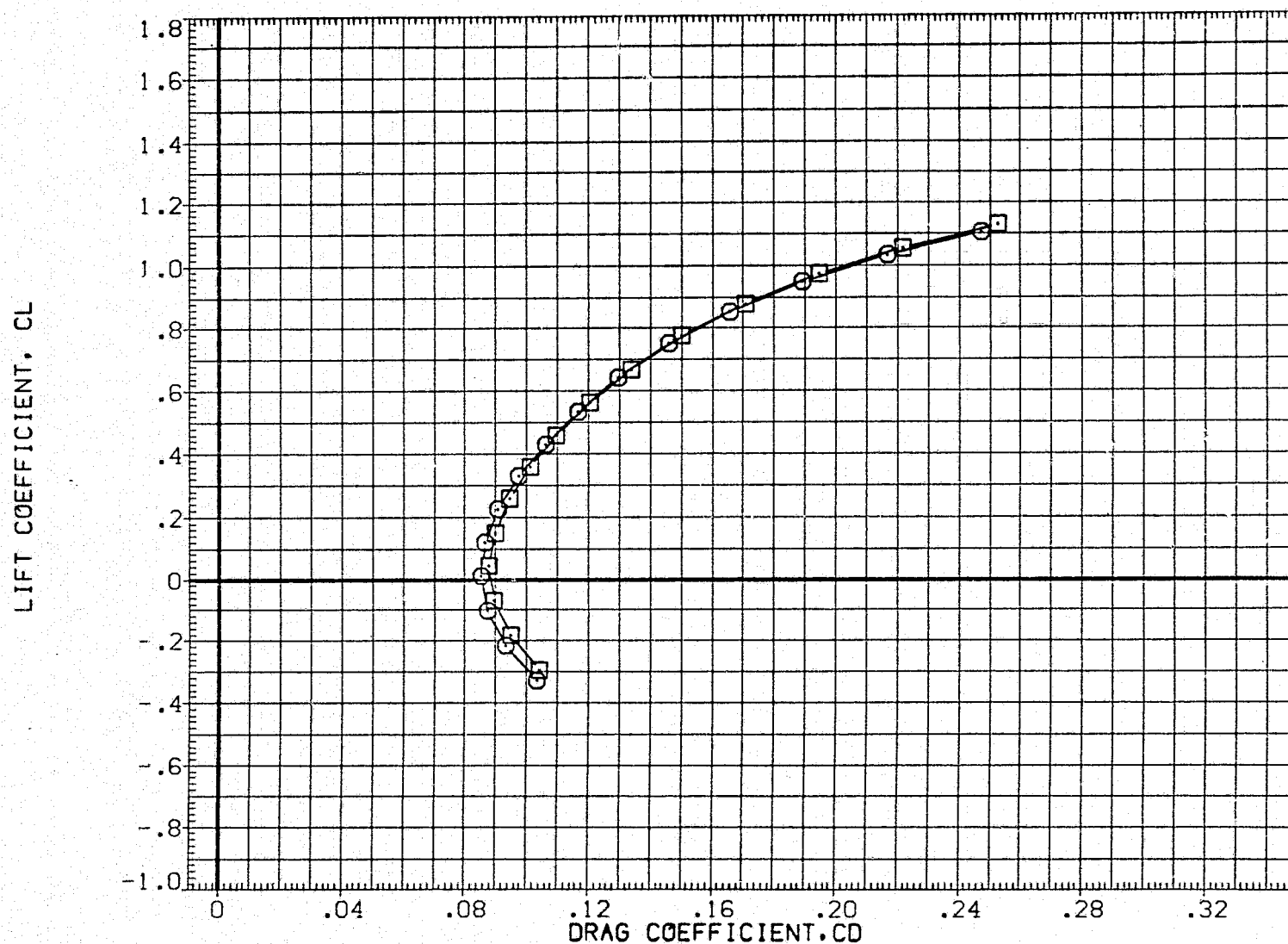


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH  
(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION		
(RGM081)	□ CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	.000	3.000	20.000	SREF	5500.0000	50.FT.
(RGM085)	○ CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2349.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

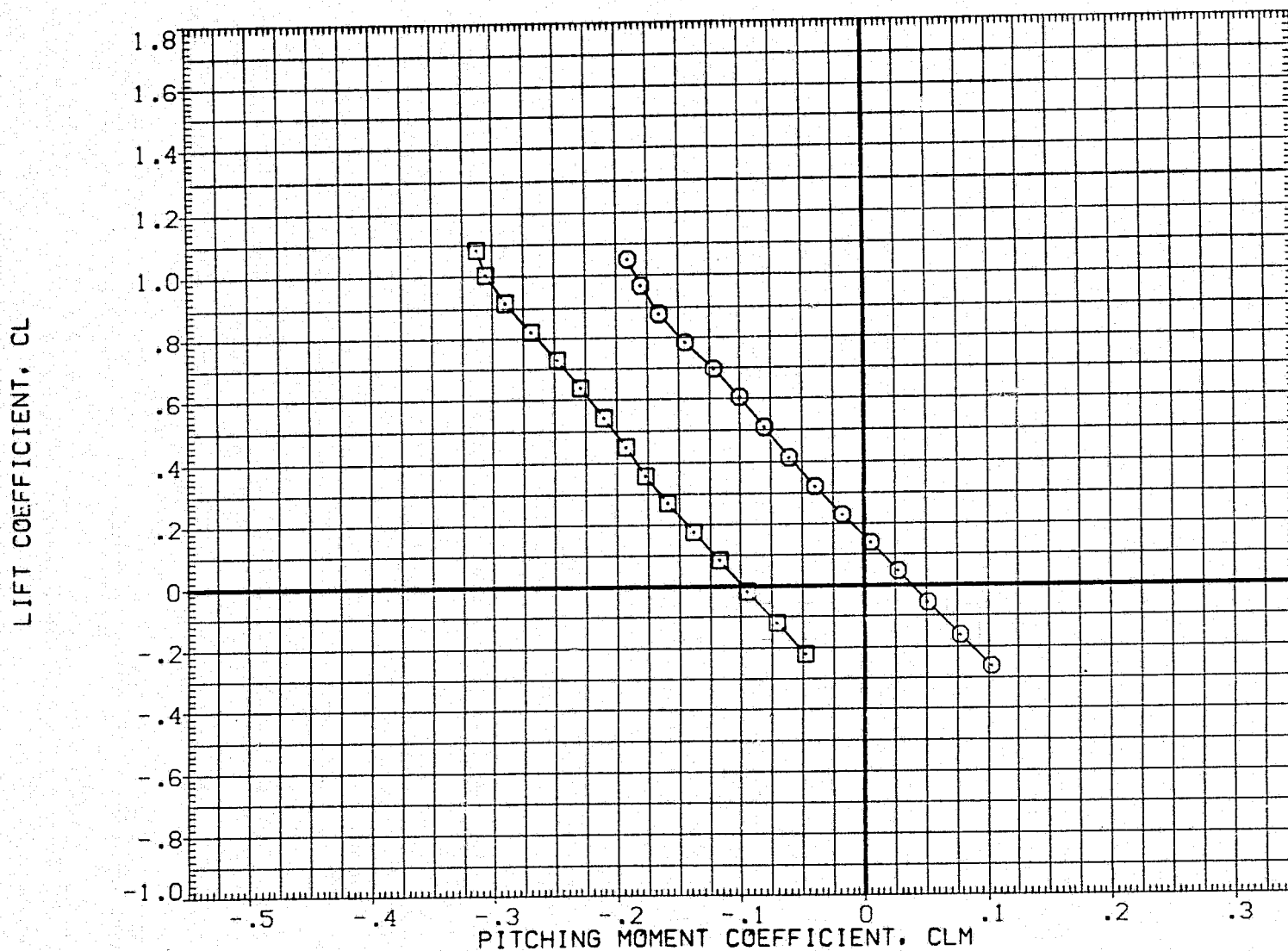


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH  
(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM085)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

ELV-1B

ELV-0B

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

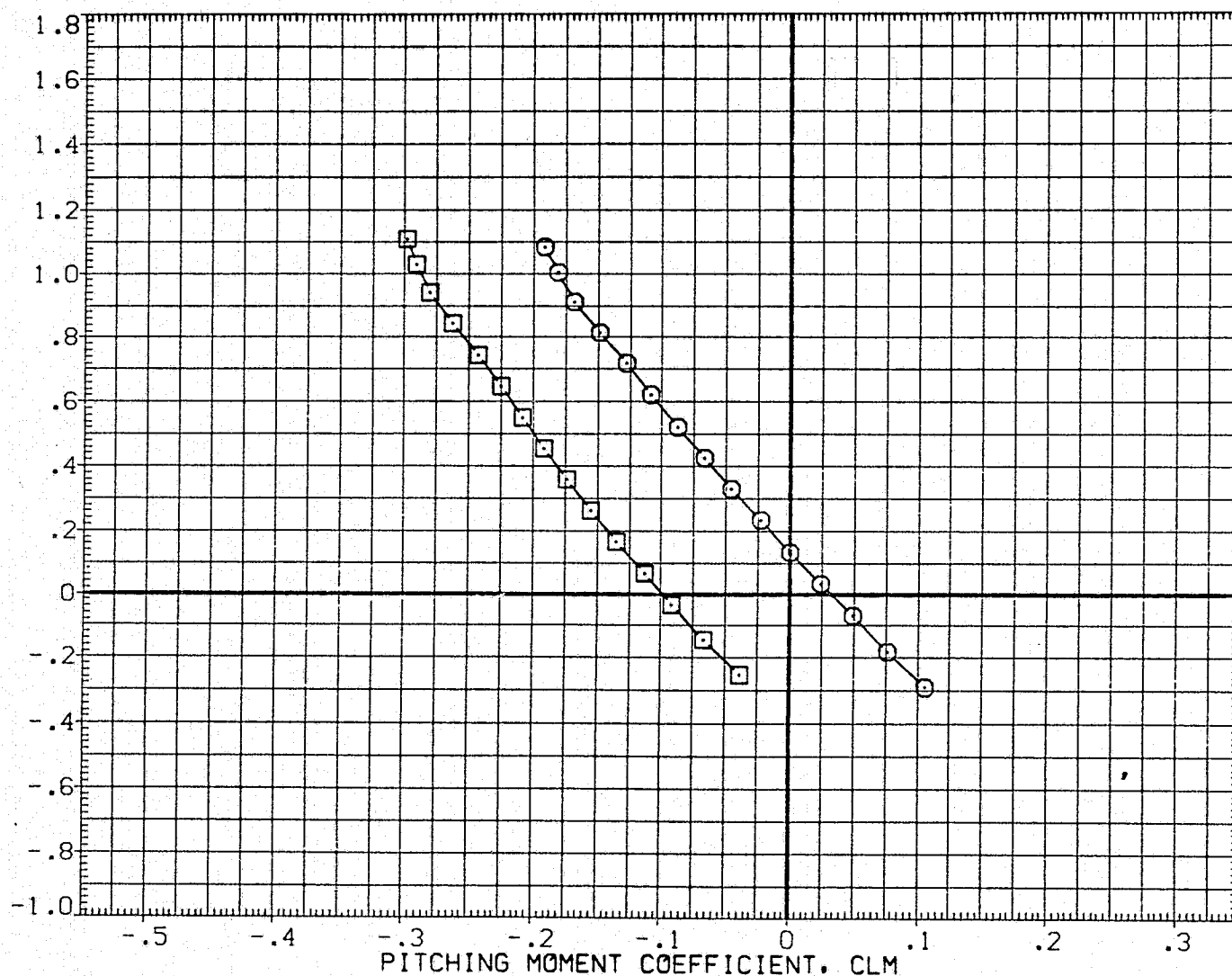


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH  
 (B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM085)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB

ELV-1B

ELV-0B

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

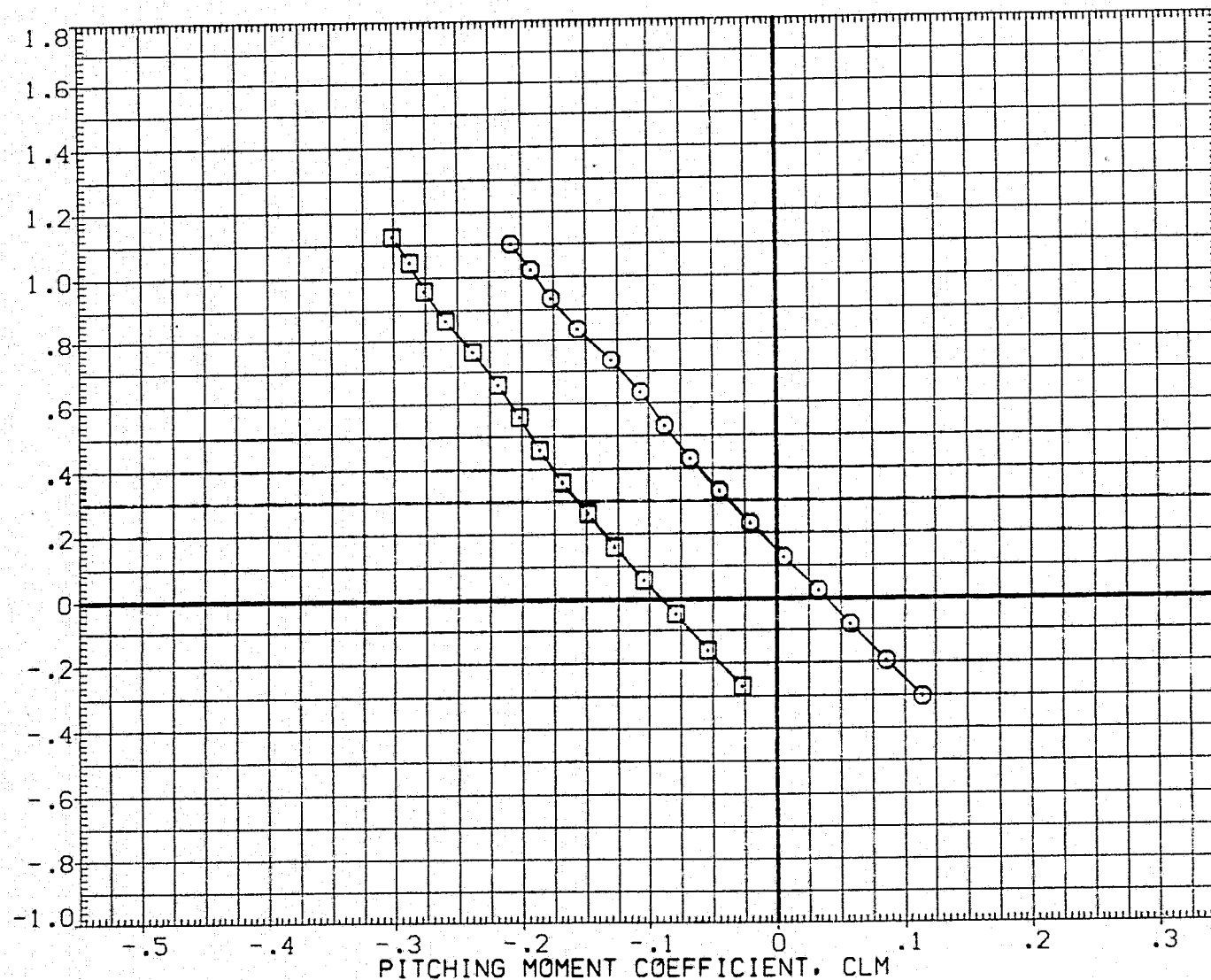


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
(RGM081)	CAS K1 FO H15.6 V9.1 (PLUS. 00P TC5 AT38.2)	1.000	.000	3.000	20.000	SREF	5500.0000	SQ.FT.
(RGM085)	CAS K1 FO H15.6 V9.1 (PLUS. 00B TC5 AT38.2)	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

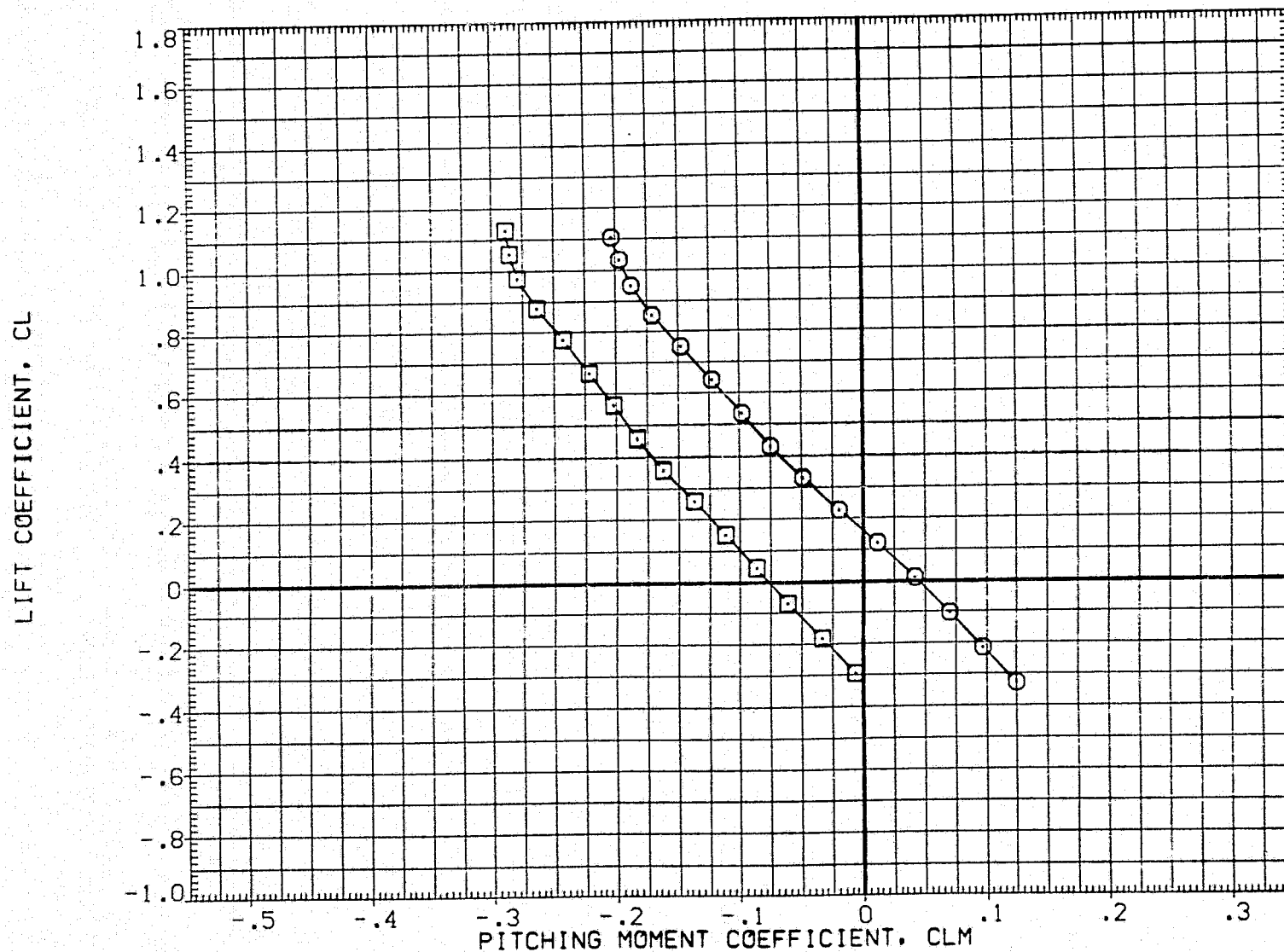


FIG. 236 747+0RB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH  
(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION	
(RGMD81)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000 SQ. FT.
(RGMD85)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000 IN.
						BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

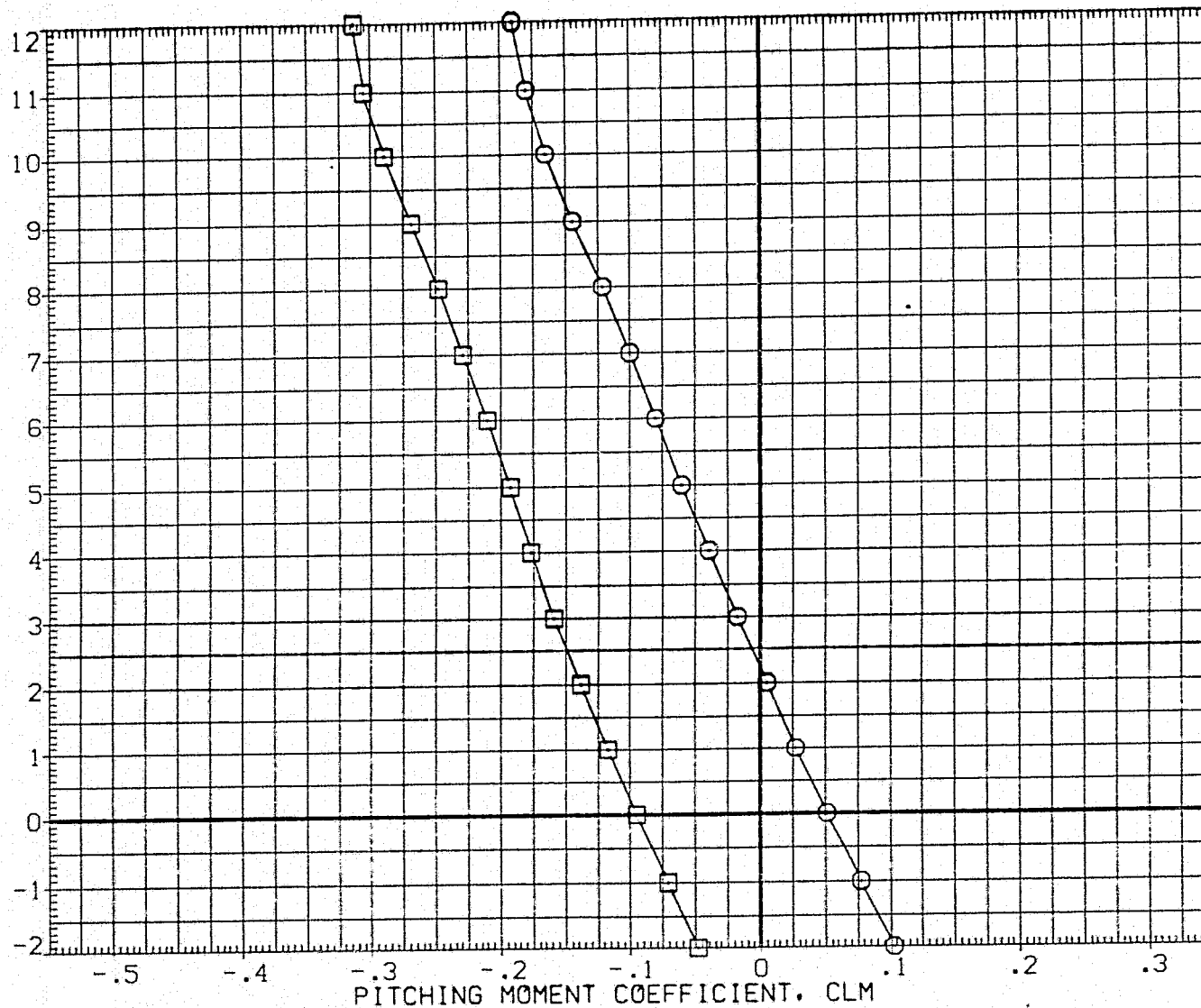


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH

(A)MACH = .30



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
(RGM081)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	.000	3.000	20.000	SREF	5500.0000	SQ. FT.
(RGM085)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

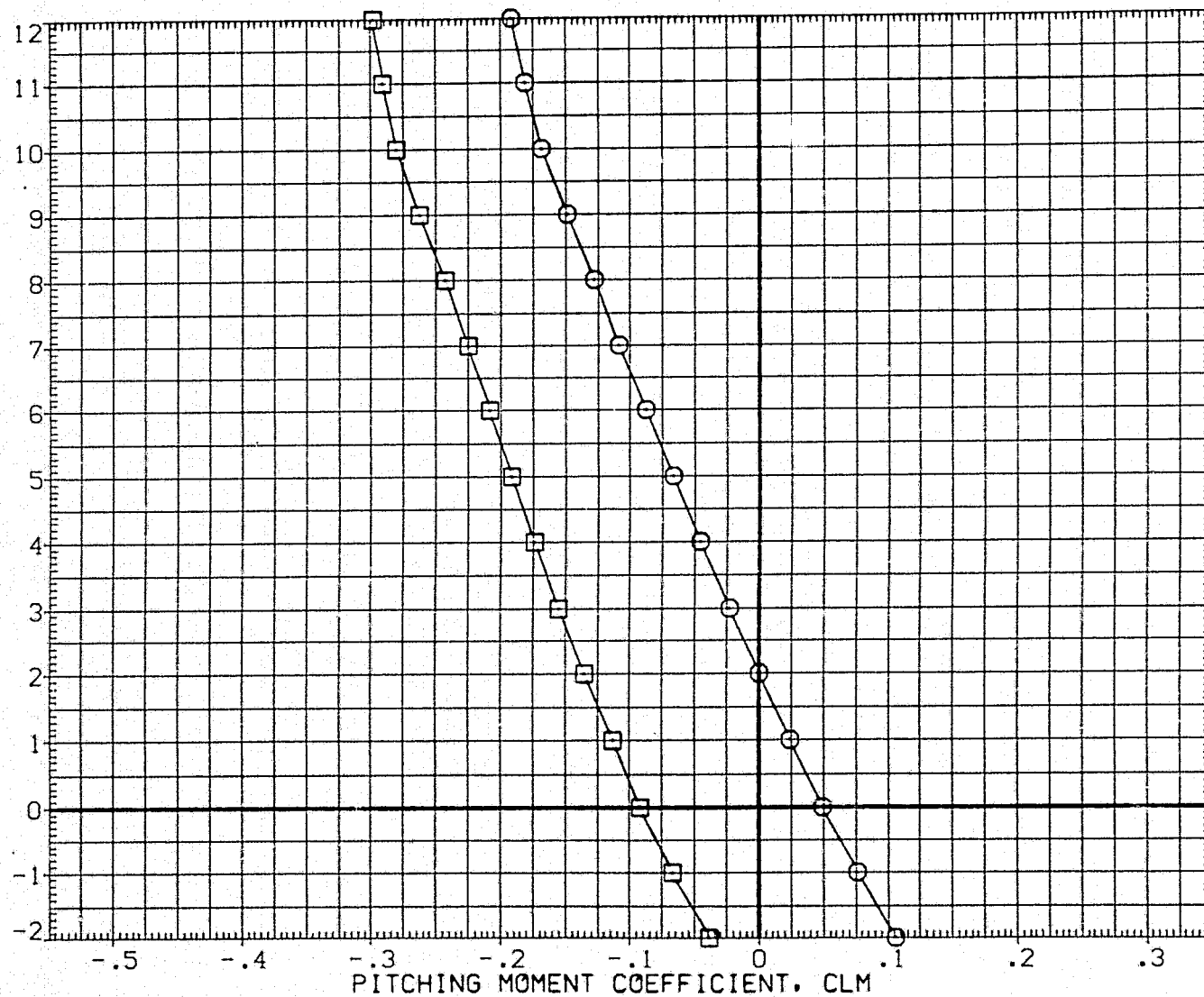


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH  
(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION		
(RGM081)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	.000	3.000	20.000	SREF	5500.0000	50. FT.
(RGM085)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.



FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION	
(RGM081)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	.000	3.000	20.000	SREF	5500.0000 SQ.FT.
(RGM085)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	10.000	13.000	20.000	LREF	327.8000 IN.
						BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

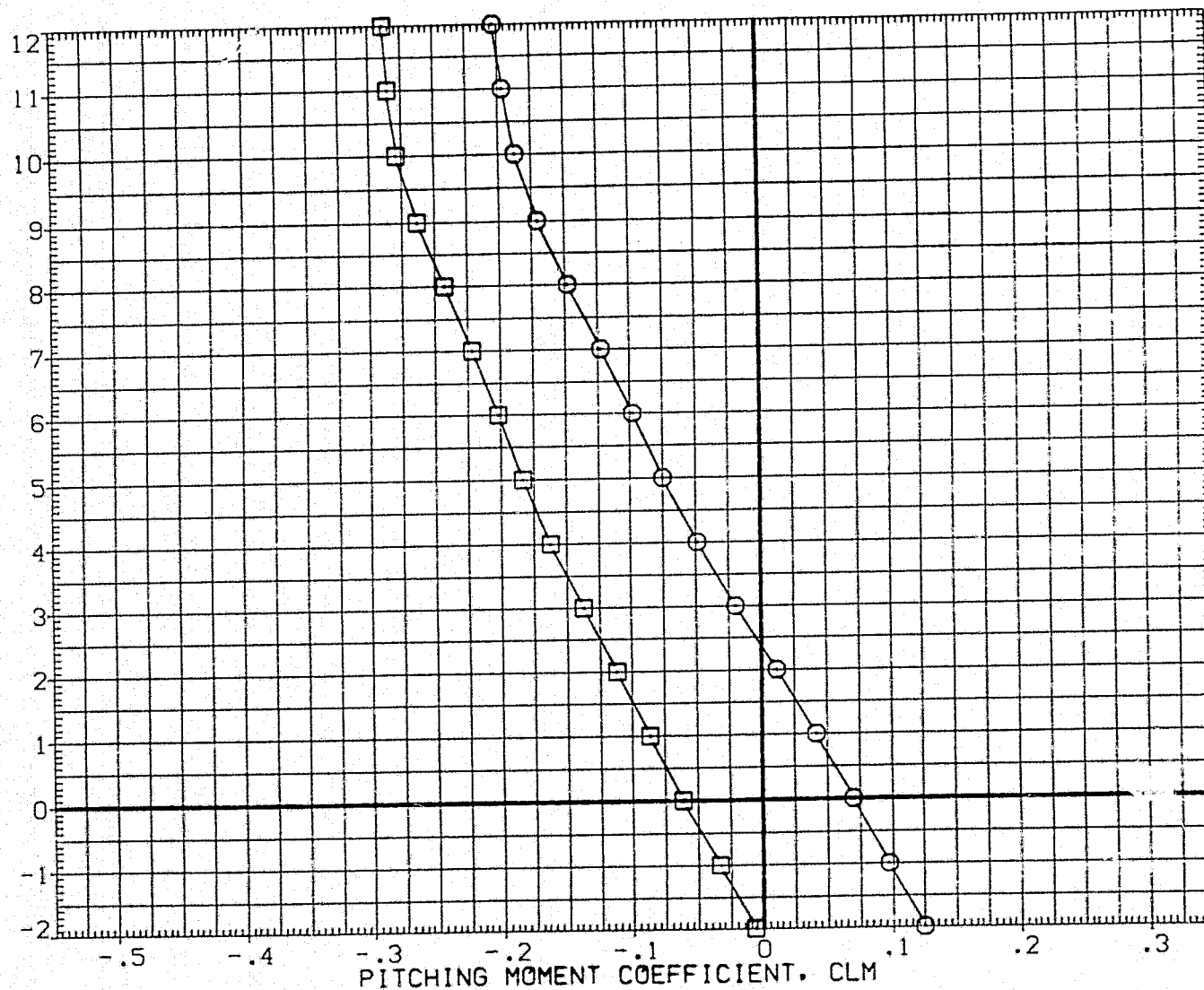


FIG. 236 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH  
(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-18	ELV-08	SS-6	REFERENCE INFORMATION	
(RGM092)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000 SQ.FT.
(RGM095)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000 IN.
						BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

LIFT COEFFICIENT, CL

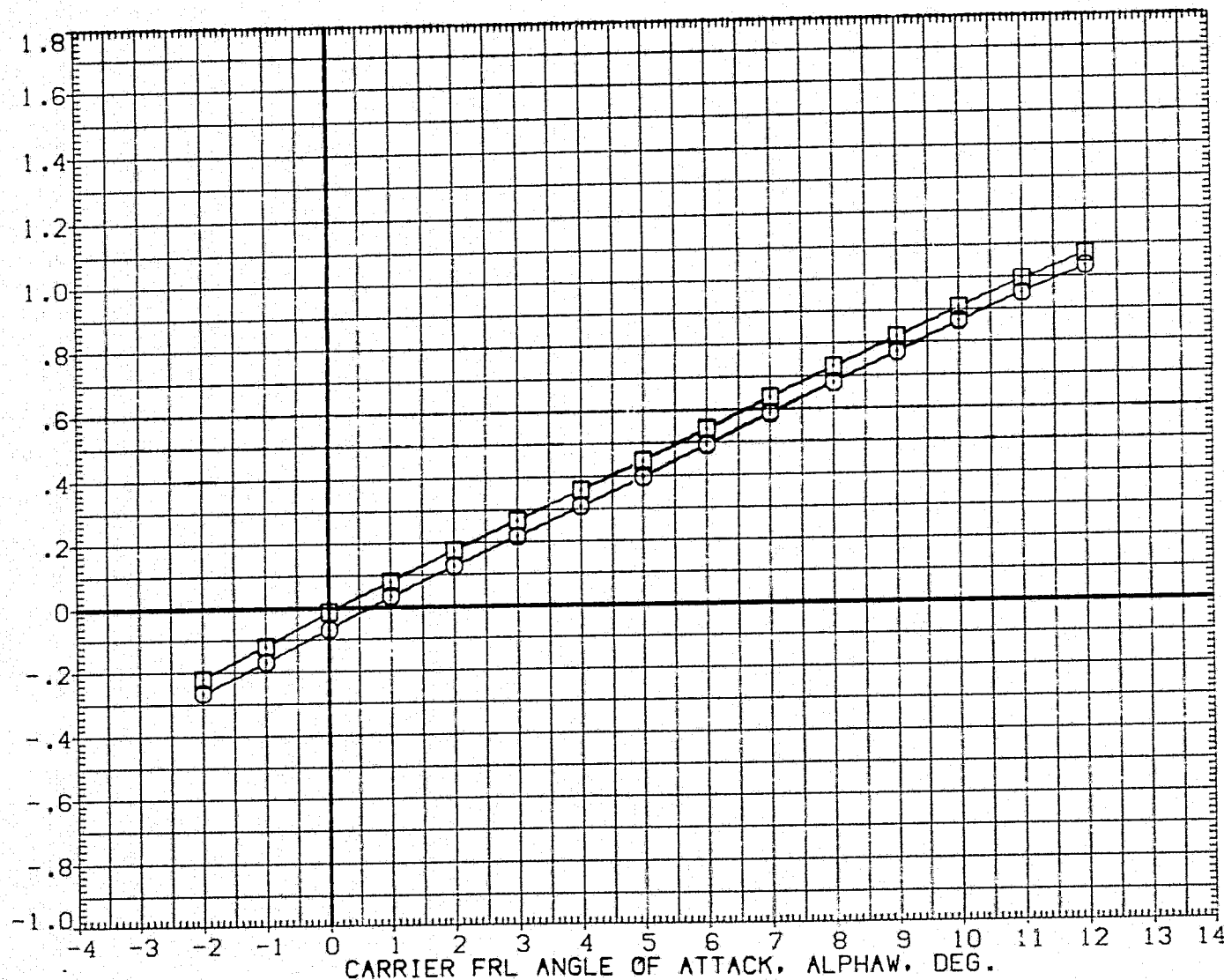


FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
(RGM092)	○ CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	SQ.FT.
(RGM095)	□ CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

LIFT COEFFICIENT, CL

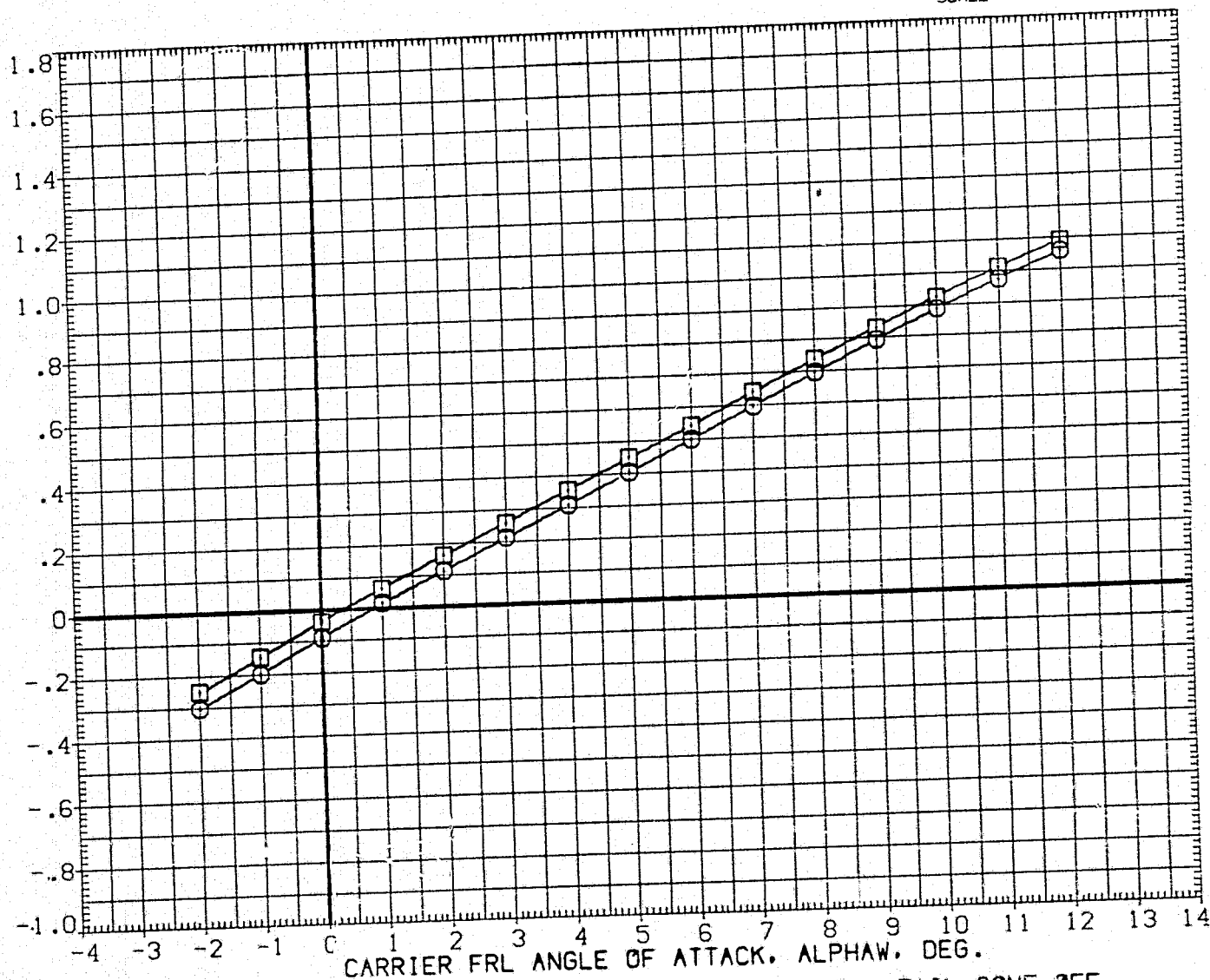


FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF  
(B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM092)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
(RGM095)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB

ELV-1B

ELV-0B

SS-6

REFERENCE INFORMATION

SREF	5500.0000	SO. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

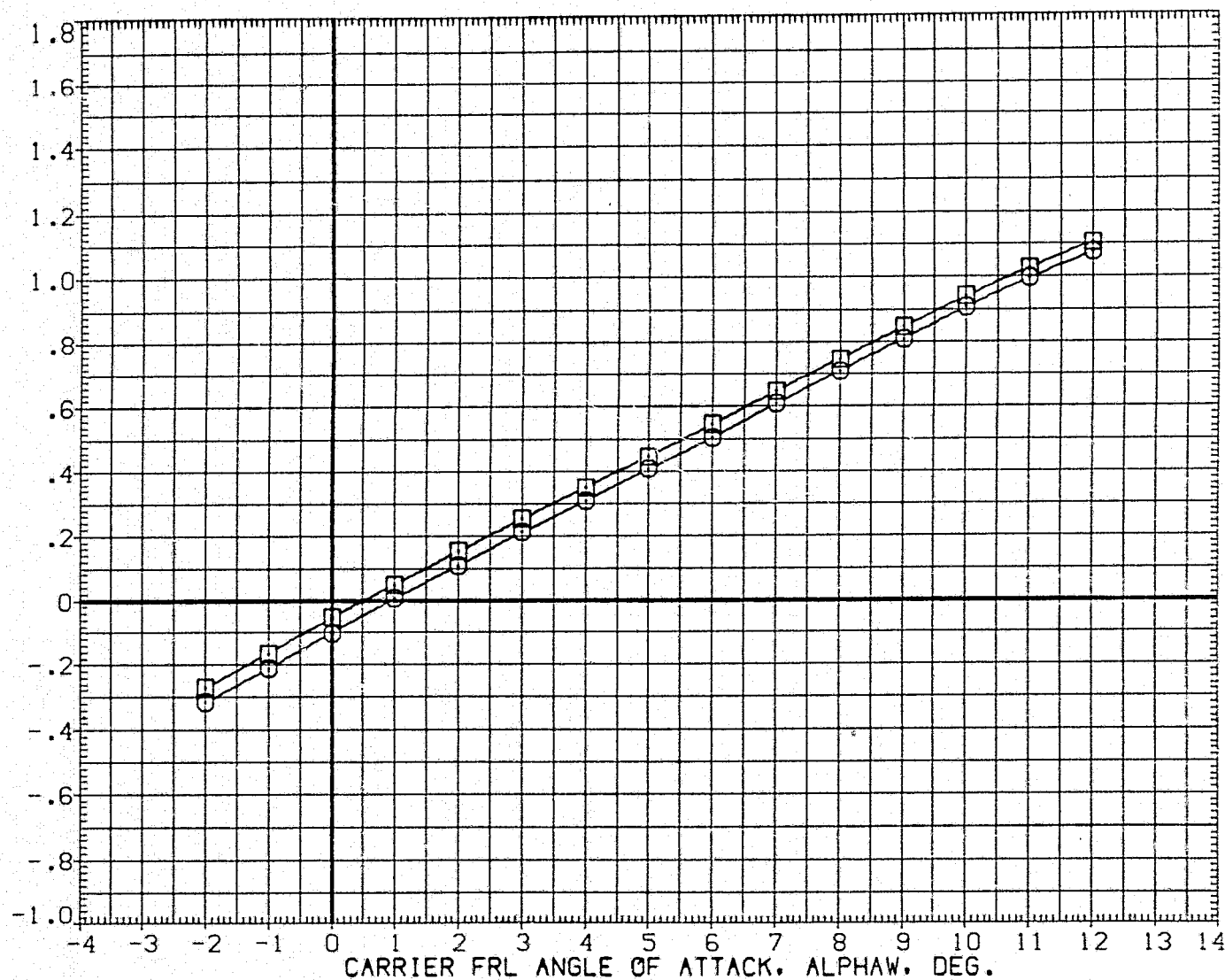


FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(C)MACH = .60

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
(RGM092)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	SQ.FT.
(RGM095)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	1348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

LIFT COEFFICIENT, CL

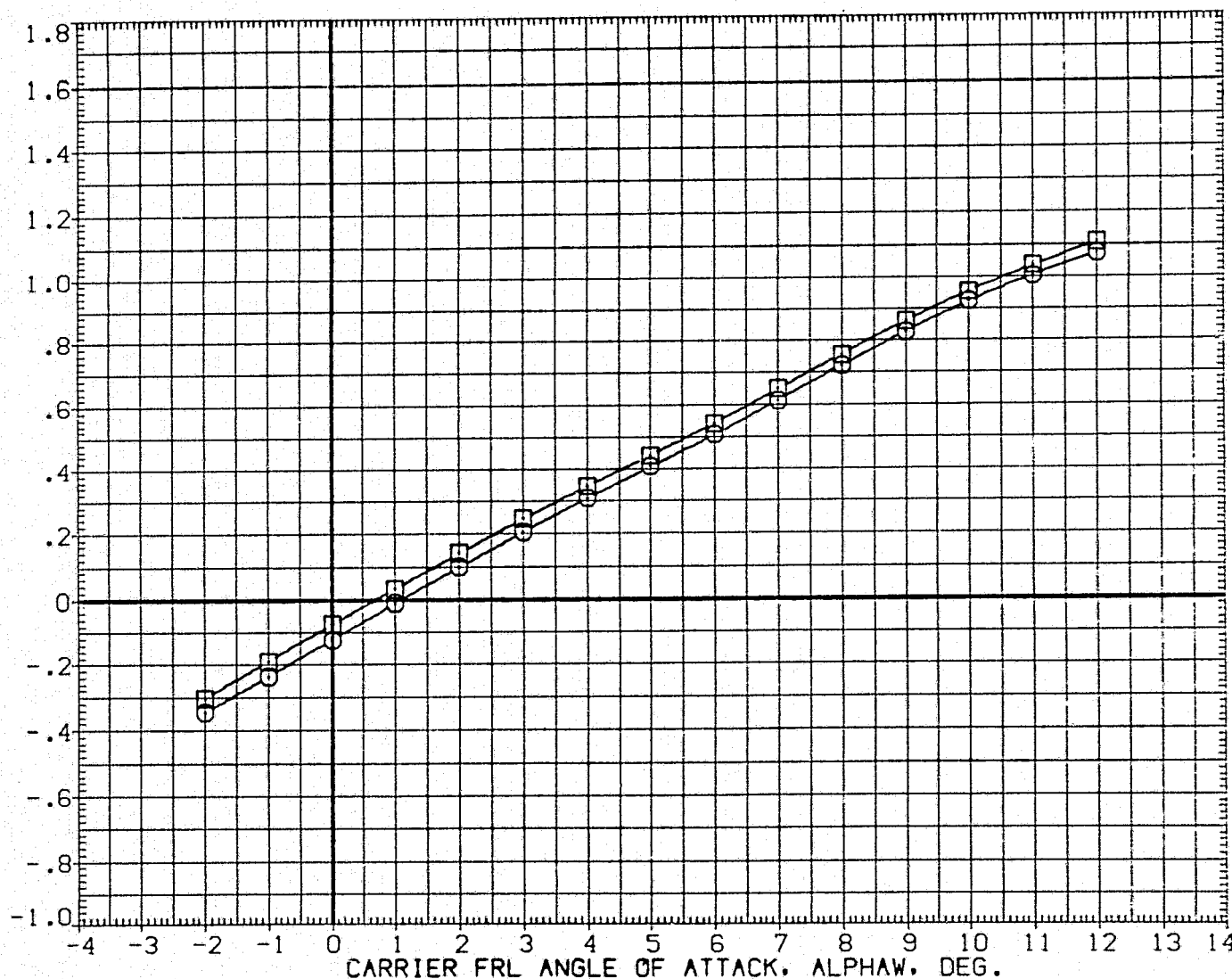


FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM092)	□	CA5	K1	FO	H15.6	V9.1	(PLUS. ORB NOZ AT38.2 )
(RGM095)	□	CA5	K1	FO	H15.6	V9.1	(PLUS. ORB NOZ AT38.2 )

STAB

ELV-1B

ELV-0B

S5-6

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

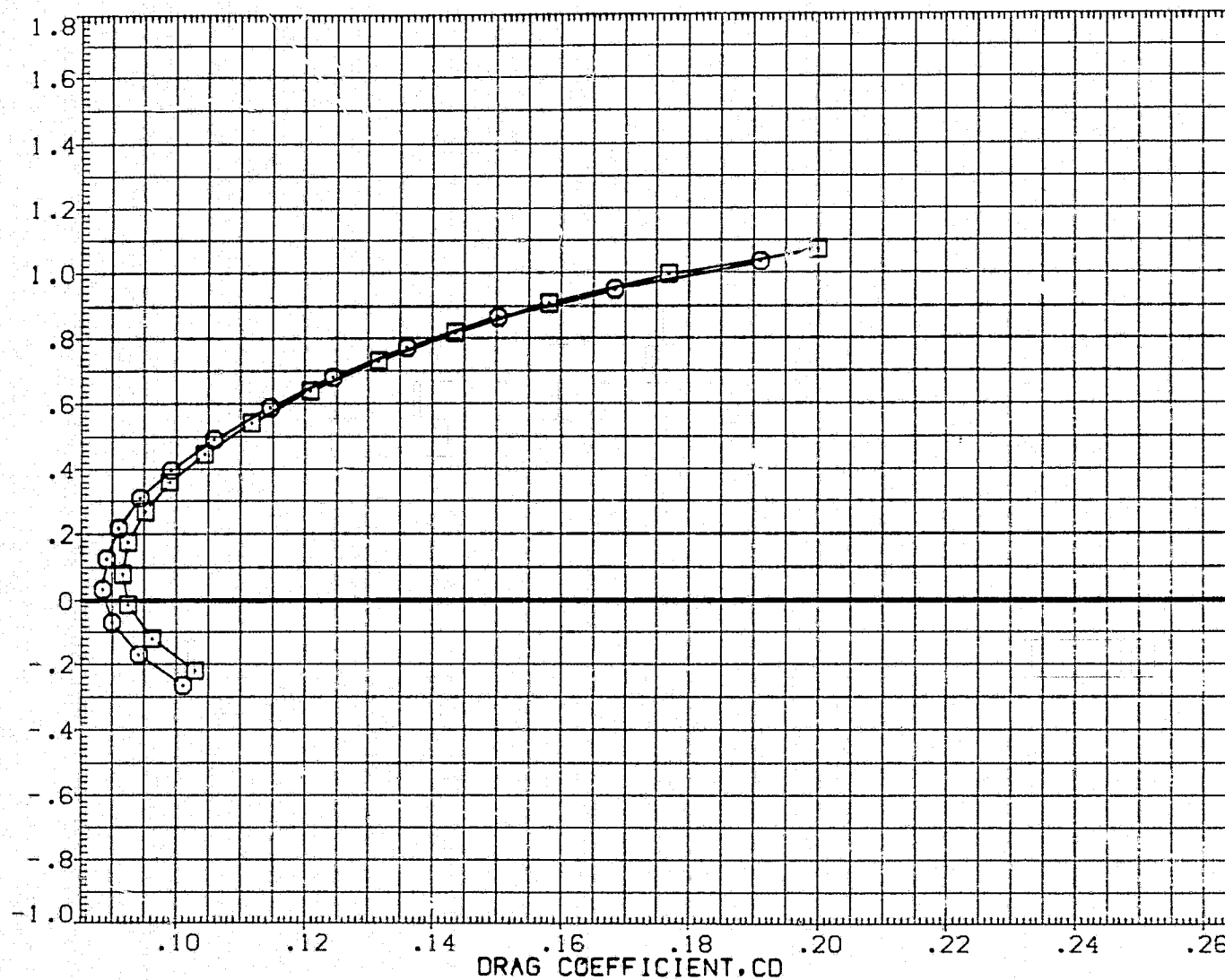


FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(A) MACH = .30

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION
(RGM092)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	1.000	.000	3.000	20.000	SREF 5500.0000 SQ.FT.
(RGM095)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	1.000	10.000	13.000	20.000	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300



FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-18	ELV-08	S5-6	REFERENCE INFORMATION		
(RGM092)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	SG.FT.
(RGM095)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	



FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM092) ○ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RGM095) □ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB ELV-18 ELV-08 S5-6  
 1.000 .000 3.000 20.000  
 1.000 10.000 13.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

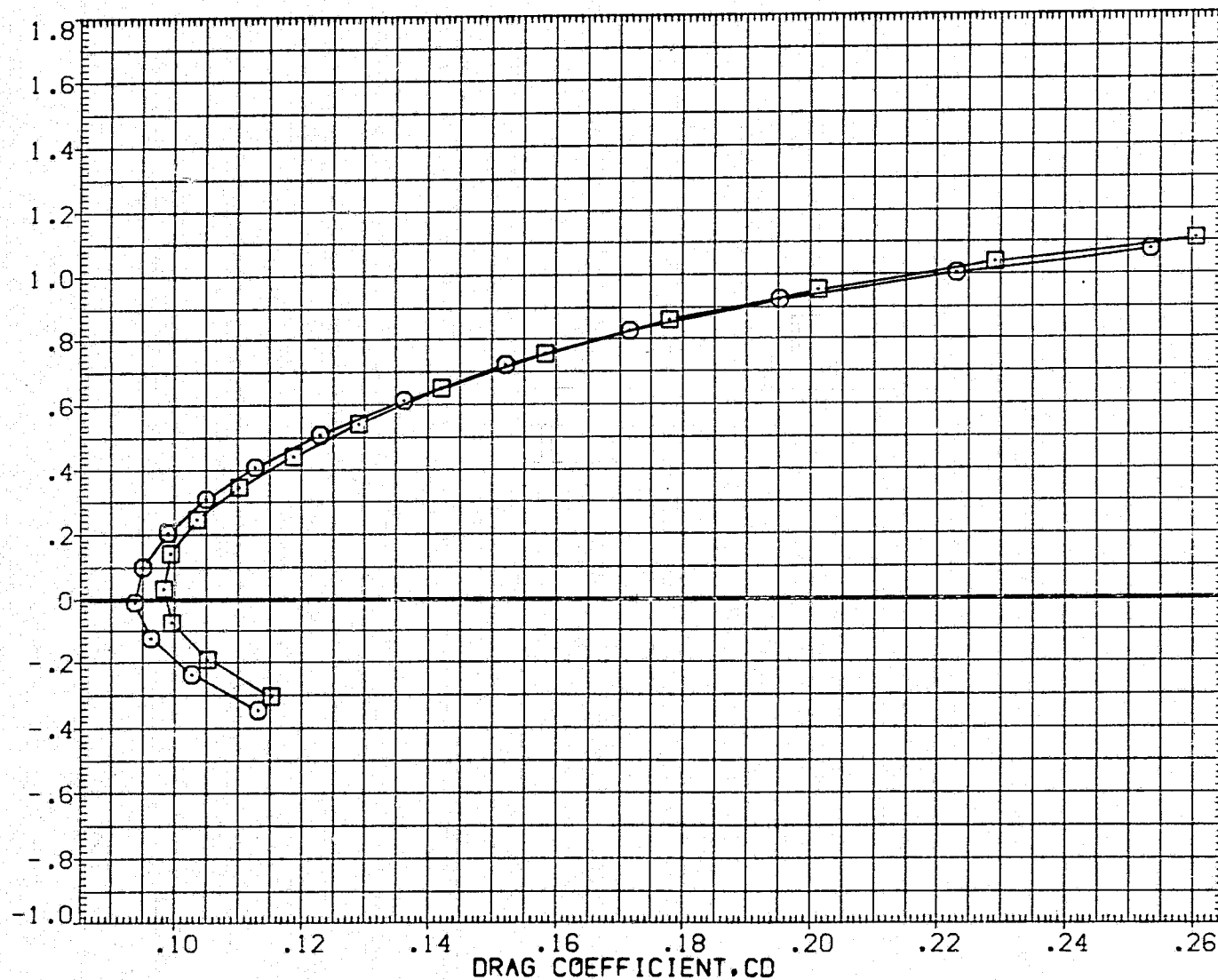


FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION		
(RGM092)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	SQ. FT.
(RGM095)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

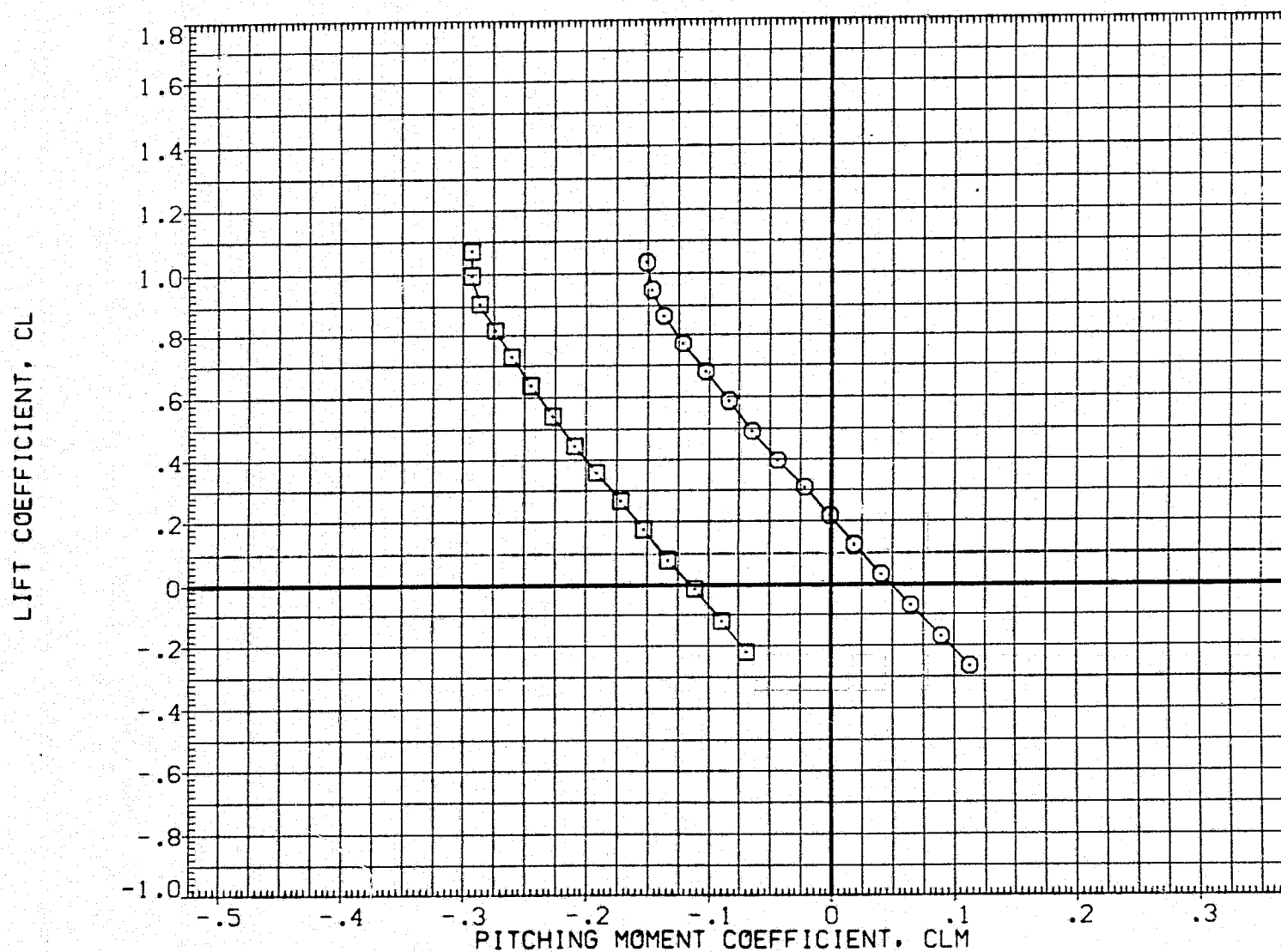


FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION
(RGM092)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	3.000	20.000	SREF 5500.0000 SQ.FT.
(RGM095)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	13.000	20.000	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

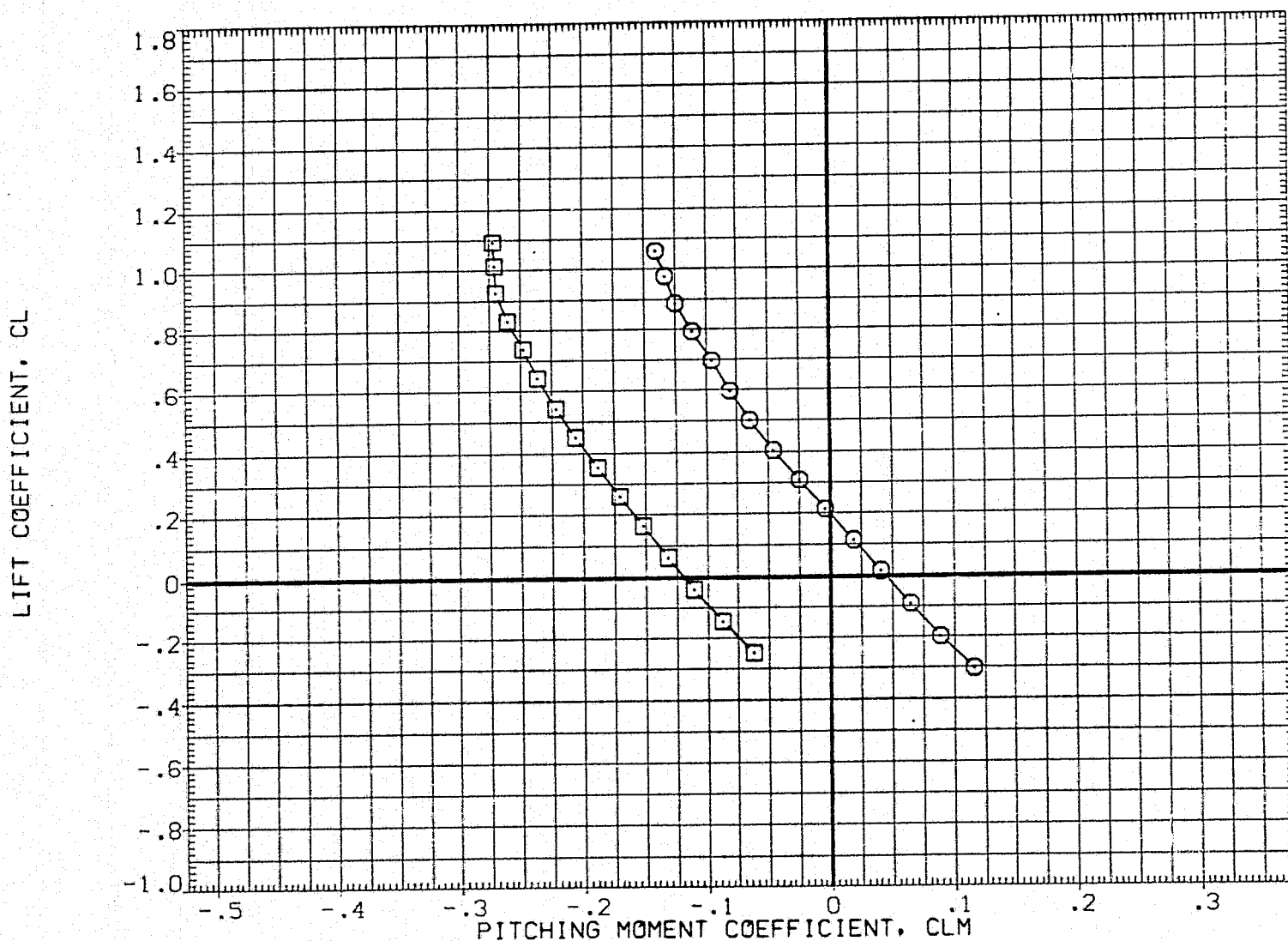


FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION		
(RGM092)	□ CAS K1 FD HIS.6 V9.1 (PLUS. 0RB NOZ AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	SO. FT.
(RGM095)	□ CAS K1 FD HIS.6 V9.1 (PLUS. 0RB NOZ AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

LIFT COEFFICIENT, CL

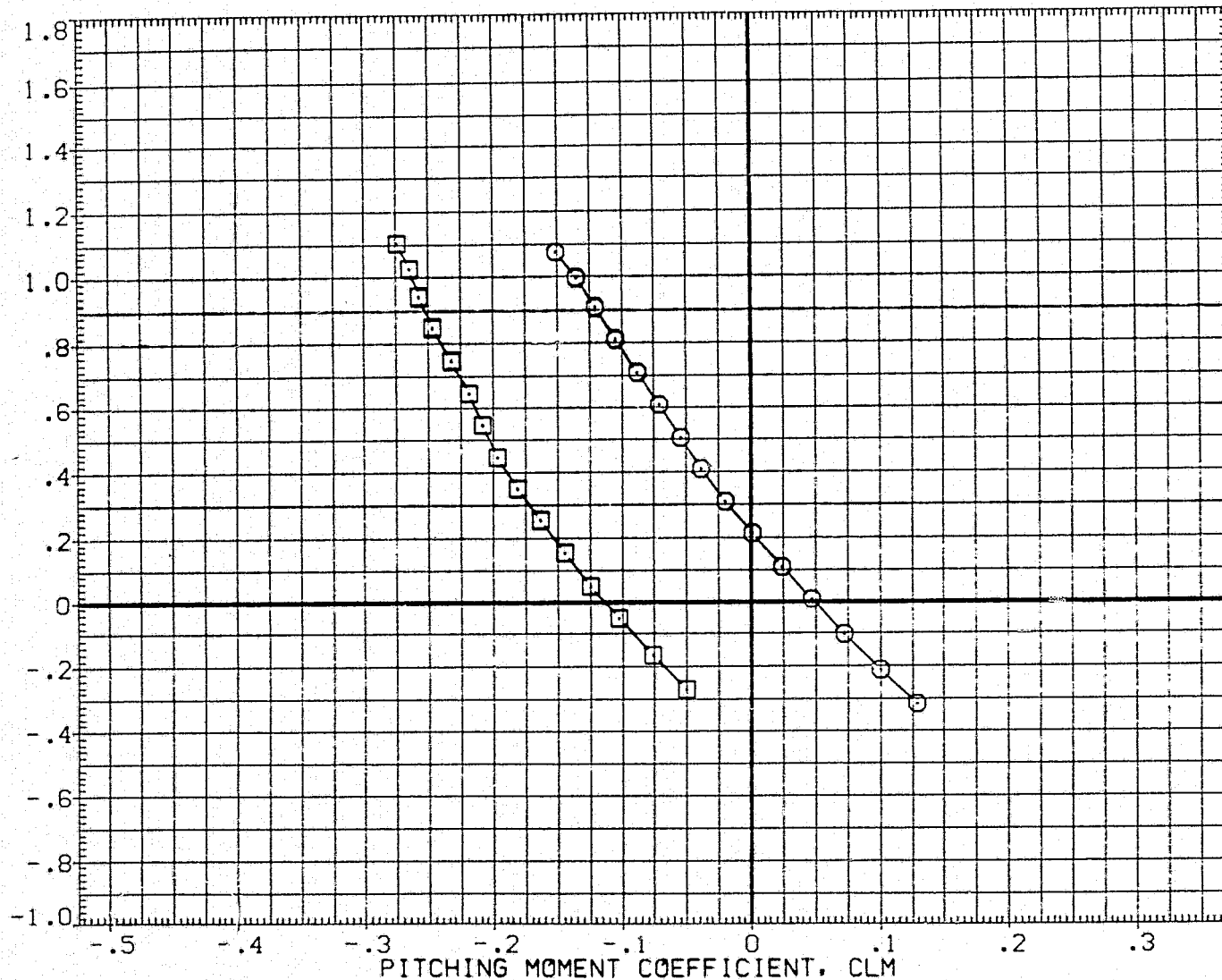


FIG. 237 747+0RB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM092)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RGM095)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB ELV-1B ELV-0B S5-6  
 1.000 .000 3.000 20.000  
 1.000 10.000 13.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL



FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM092) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RGM095) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB

ELV-1B

ELV-0B

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

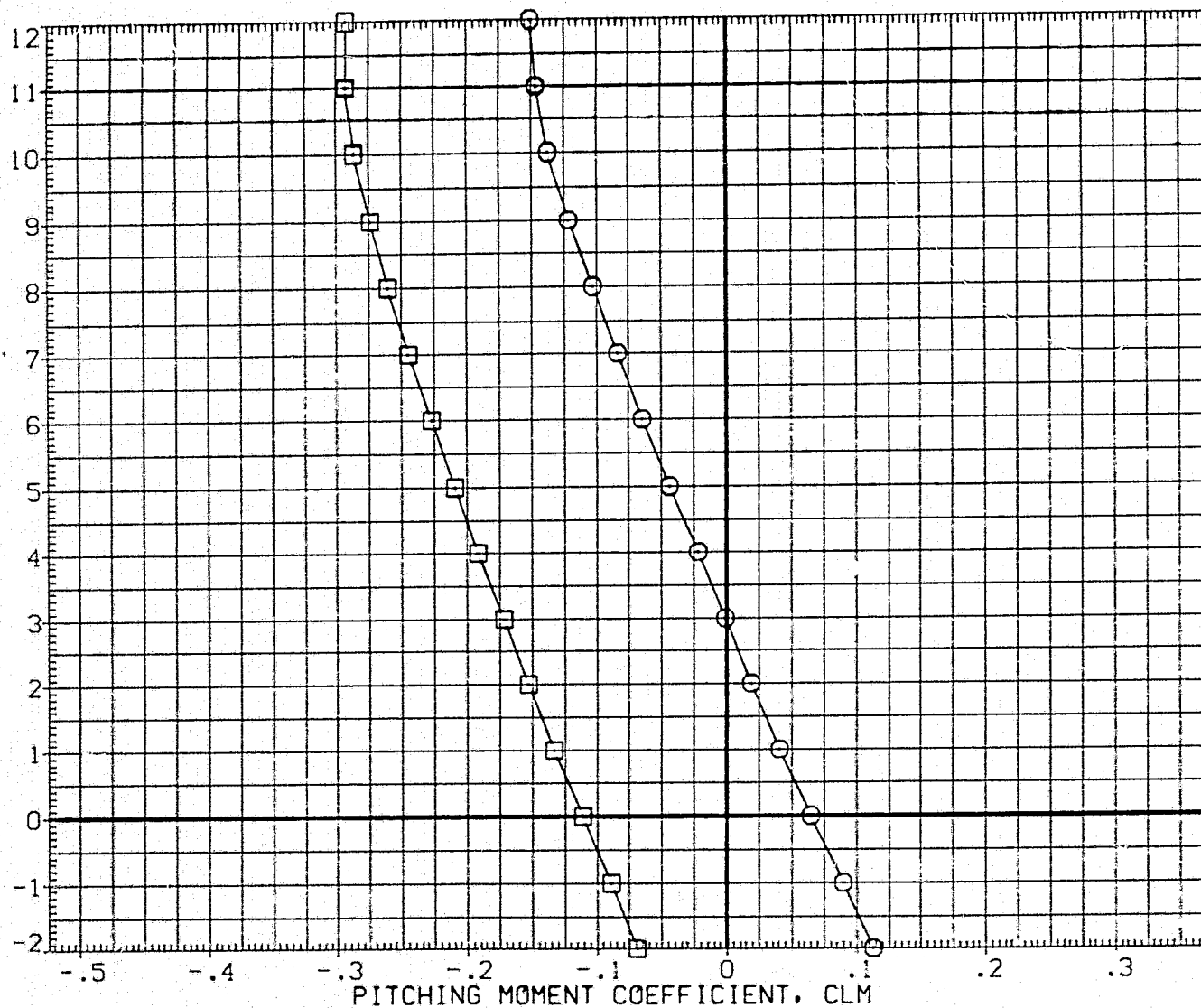


FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(A)MACH = .30



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
(RGM092)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	50. FT.
(RGM095)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

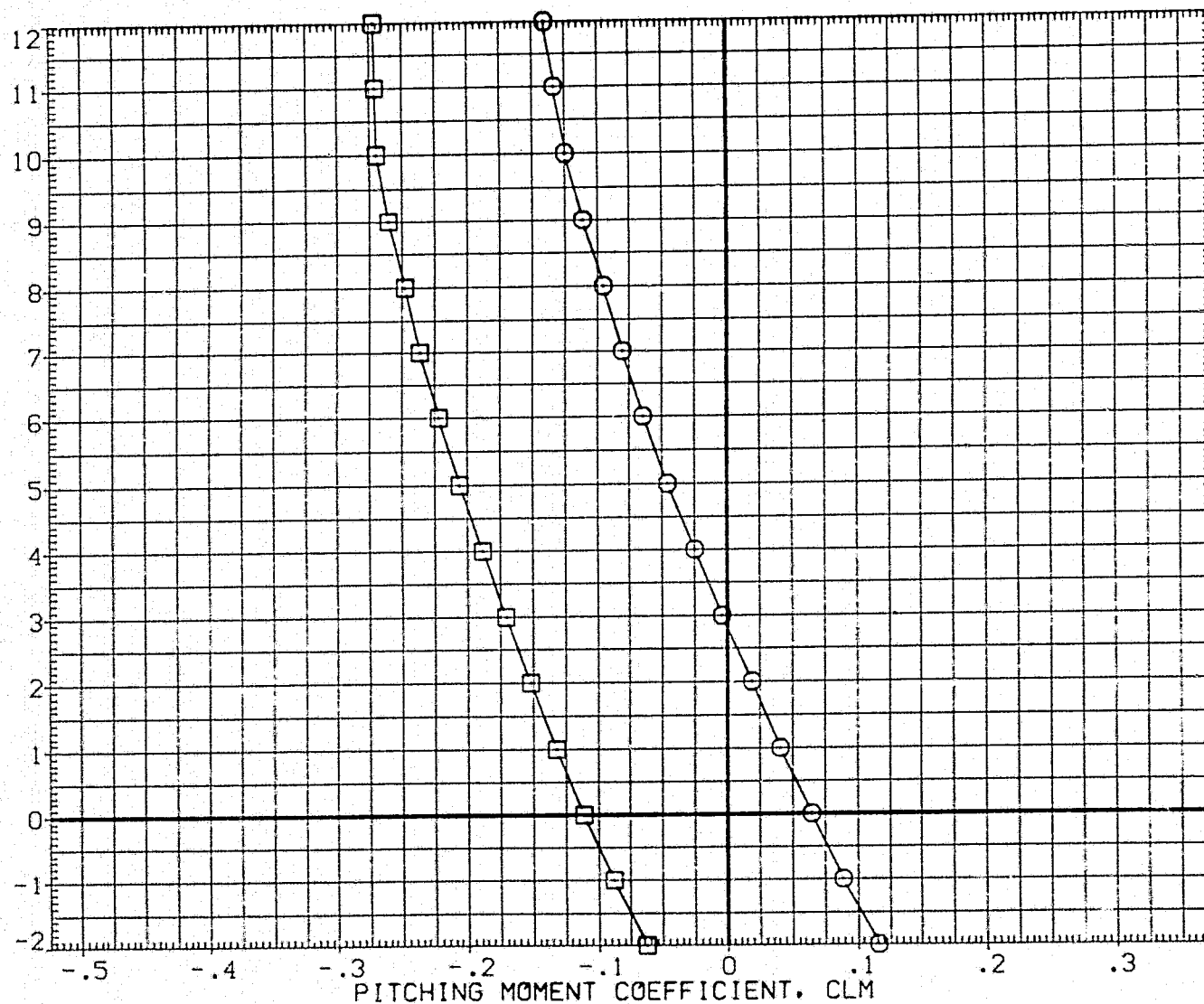


FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF  
(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
[RGM092]	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	3.000	20.000	SREF	5500.0000	50. FT.
[RGM095]	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	13.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHAW, DEG.

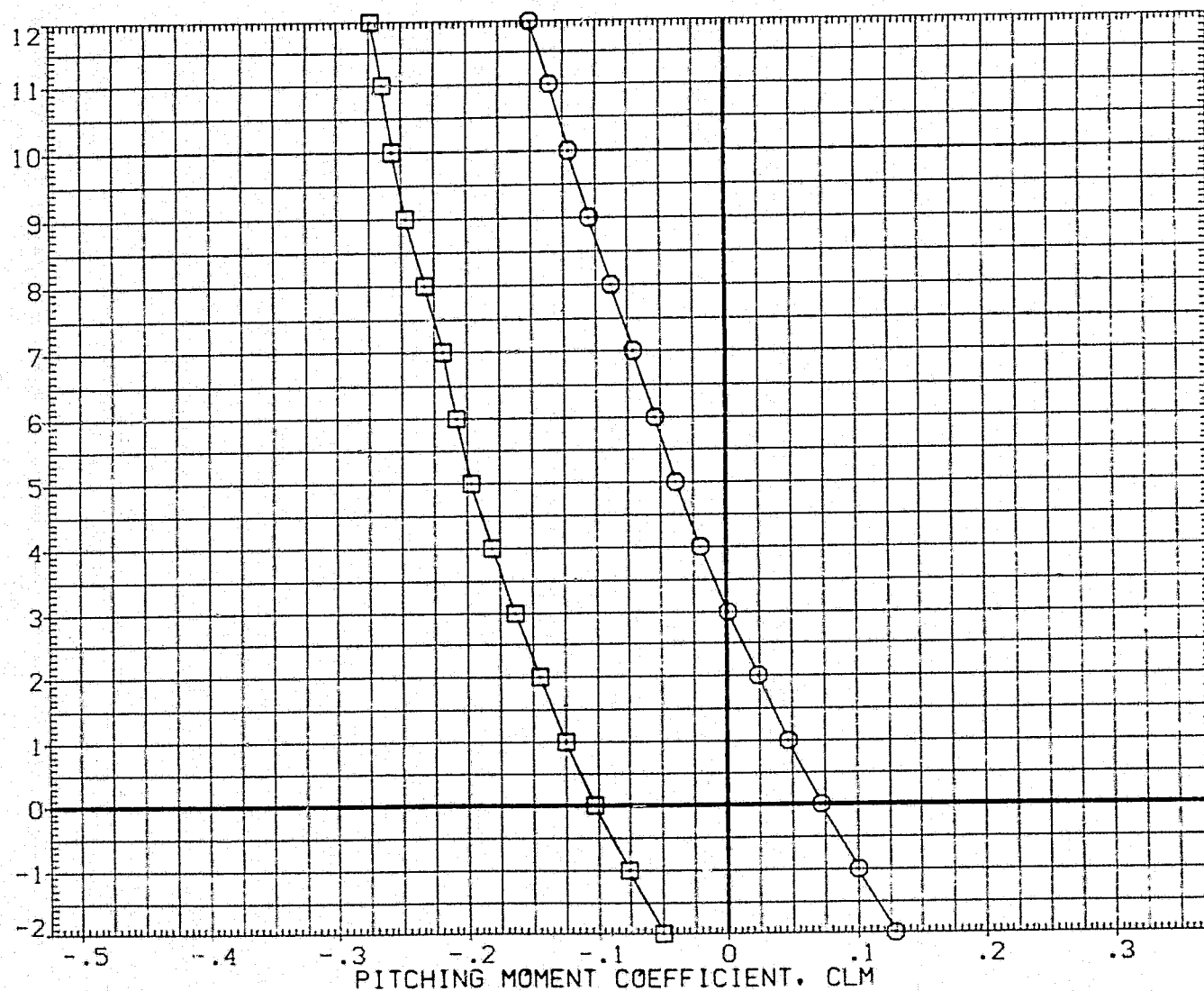


FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF  
(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM092)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RGM095)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB ELV-1B ELV-0B SS-6  
 1.000 .000 3.000 20.000  
 1.000 10.000 13.000 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

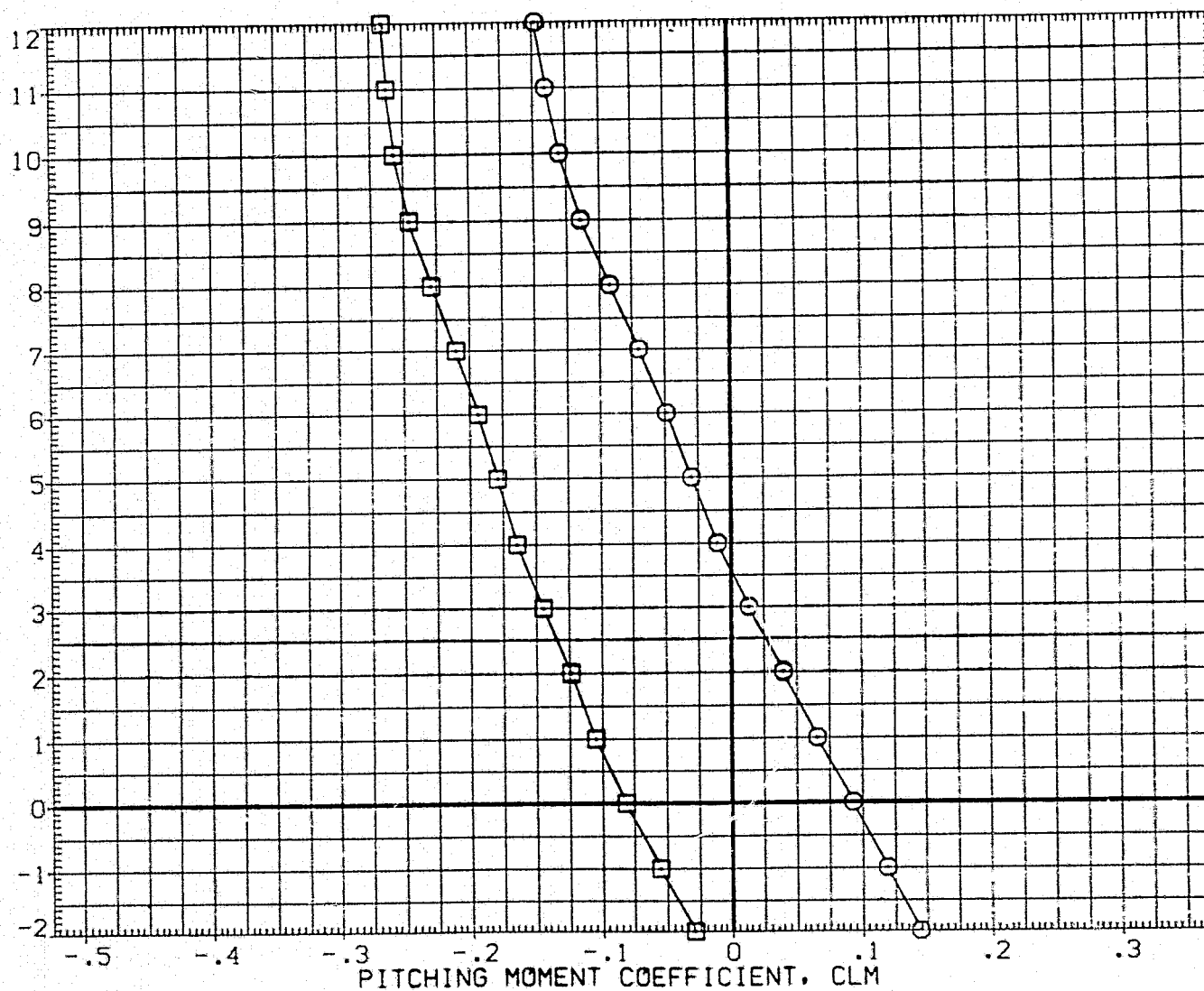


FIG. 237 747+ORB(8 DEG), ELEVATOR EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF  
 (D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-OB	S5-6	REFERENCE INFORMATION		
(R3M117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000	SC.FT.
(R3M120)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	13.000	.000	LREF	327.8000	IN.
(R3M119)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

LIFT COEFFICIENT, CL

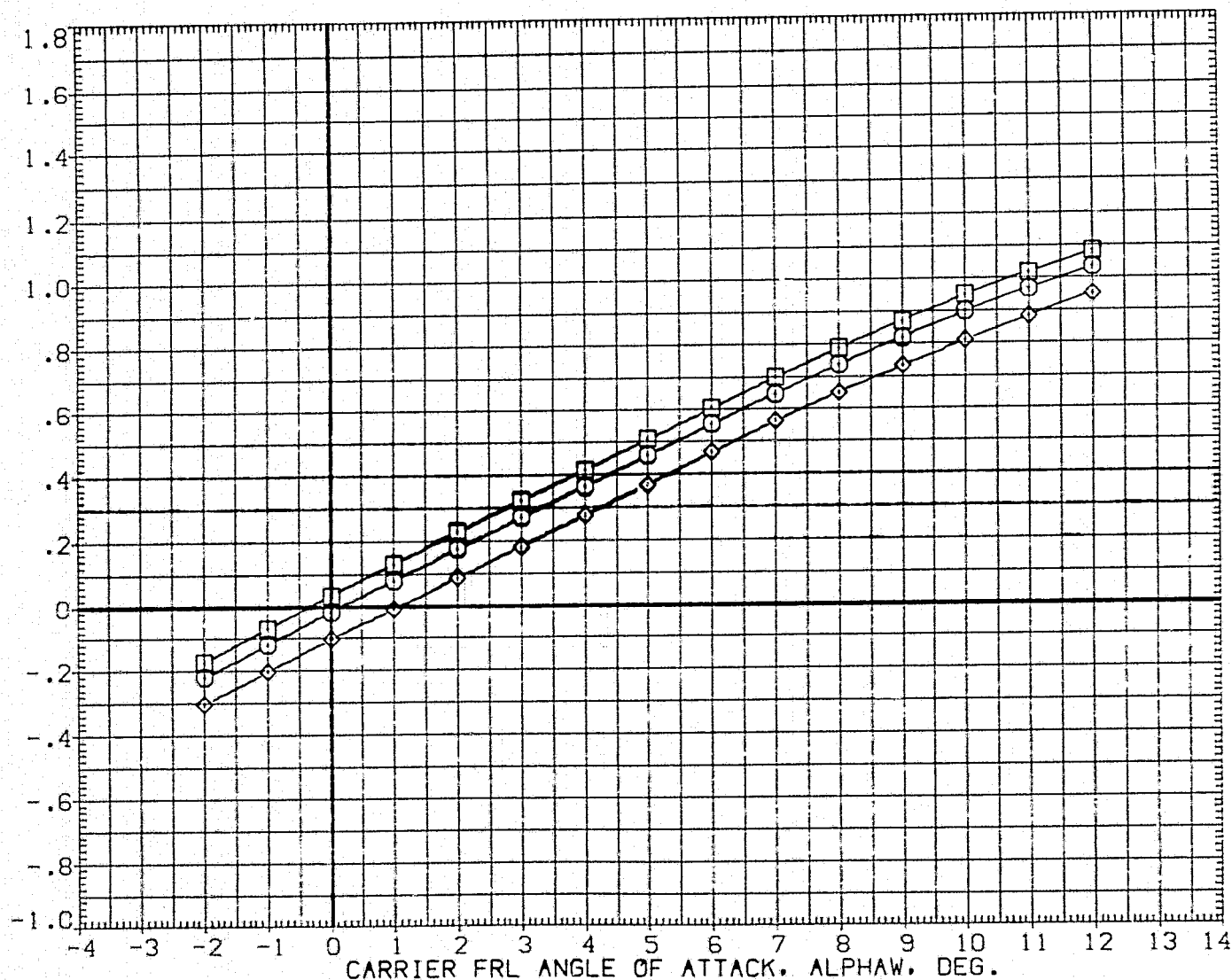


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY

(A) MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
(RGM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000	50. FT.
(RGM120)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	13.000	.000	LREF	327.8000	IN.
(RGM119)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

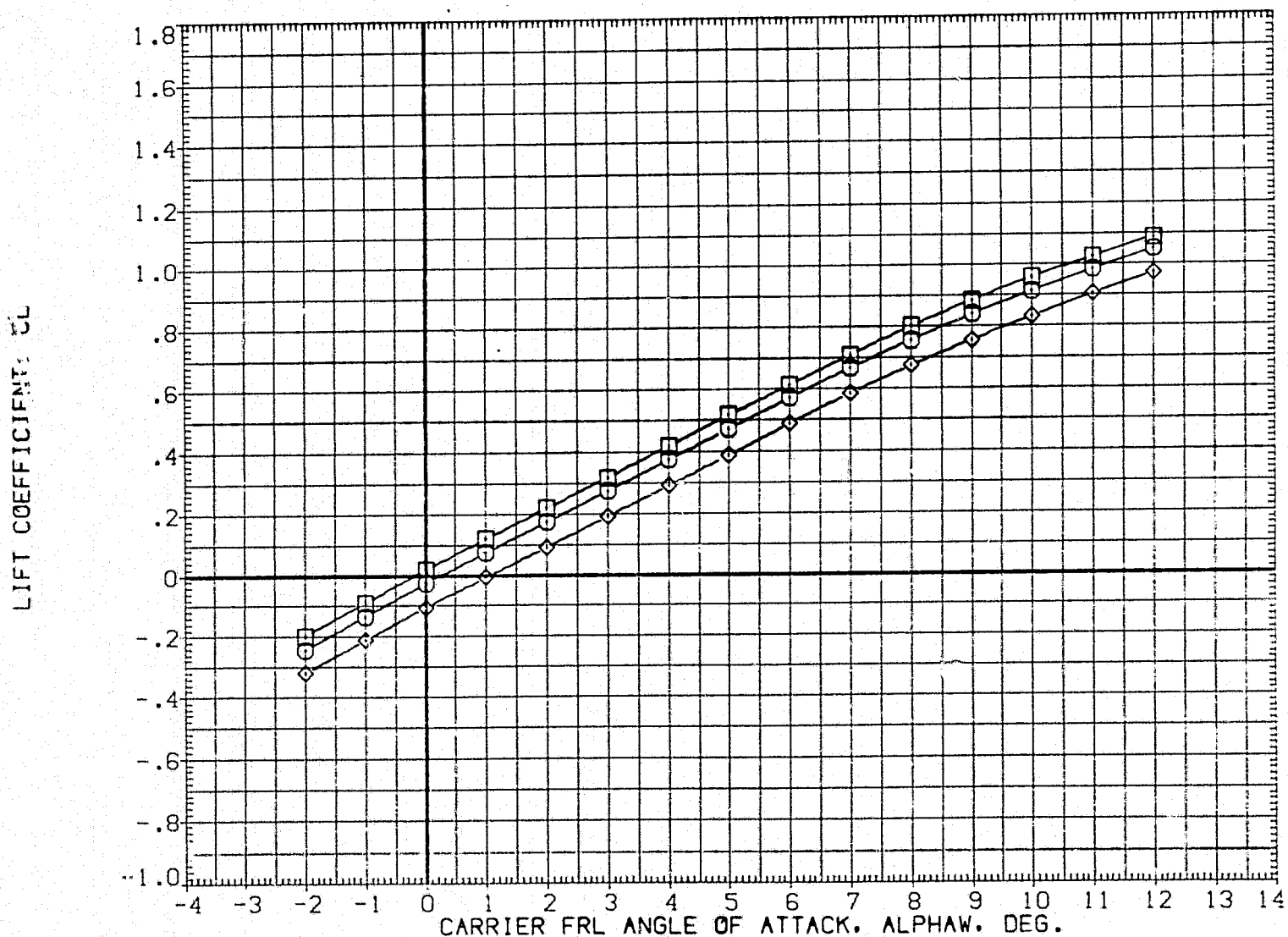


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION		
(RGM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000	SQ.FT.
(RGM120)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	13.000	.000	LREF	327.8000	IN.
(RGM119)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

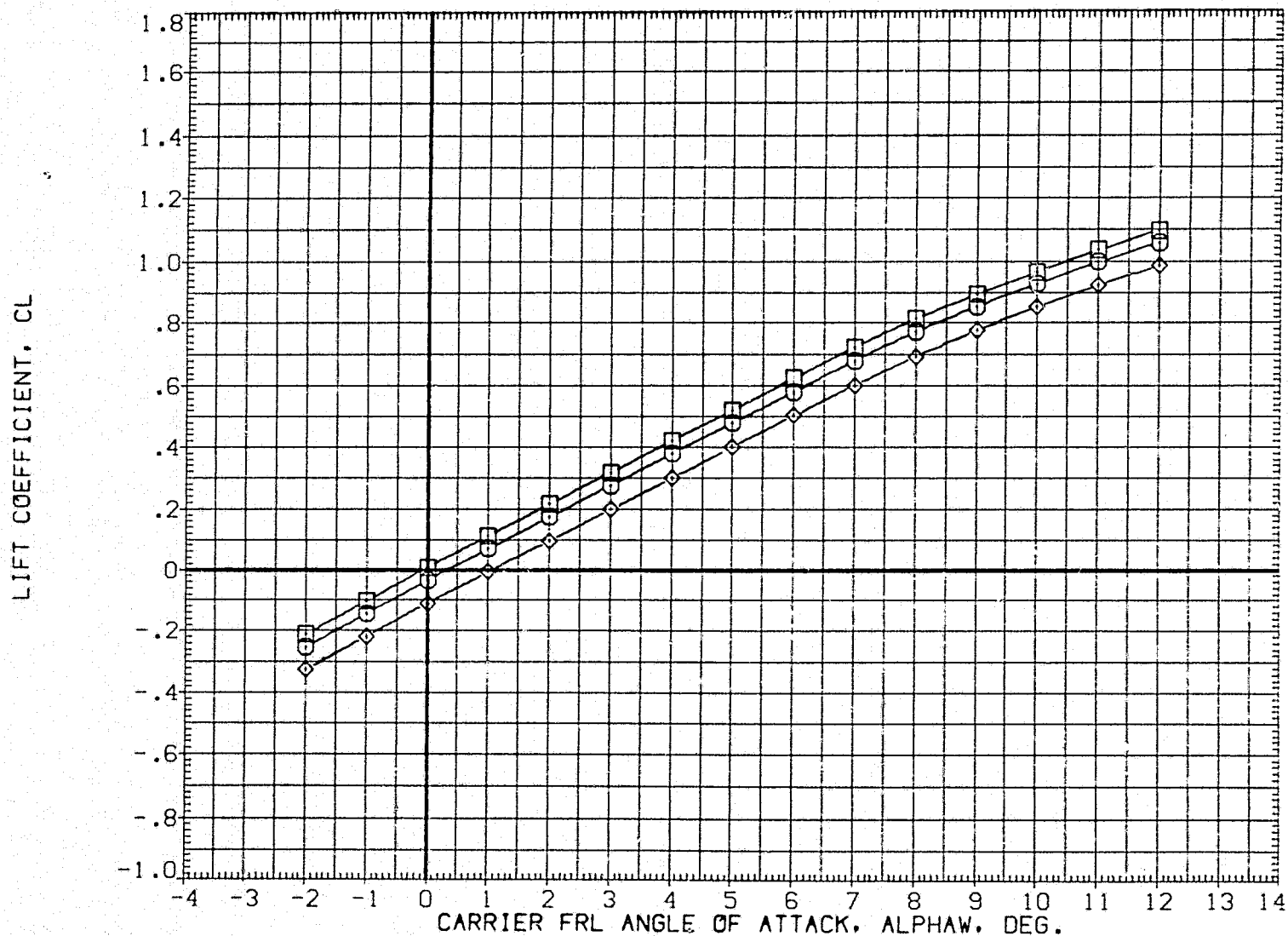


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY  
(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-18	ELV-08	SS-6	REFERENCE INFORMATION		
(RGM117)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000	SQ.FT.
(RGM120)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	13.000	.000	LREF	327.8000	IN.
(RGM119)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

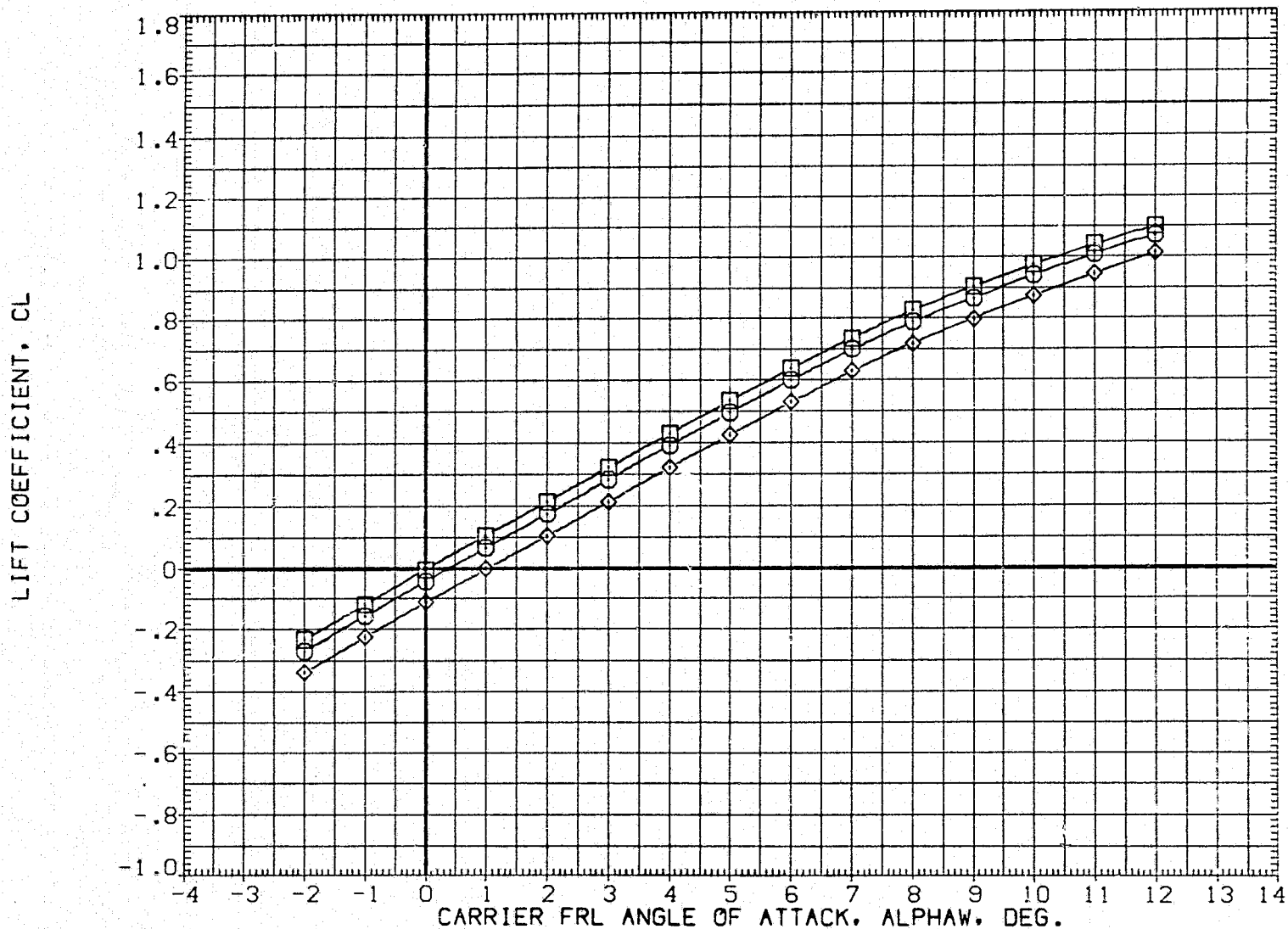


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-18	ELV-08	S5-6	REFERENCE INFORMATION
(RGM117)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	.000	3.000	.000	SREF 5500.0000 SQ.FT.
(RGM120)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	13.000	.000	LREF 327.8000 IN.
(RGM119)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	-10.000	-7.000	.000	BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

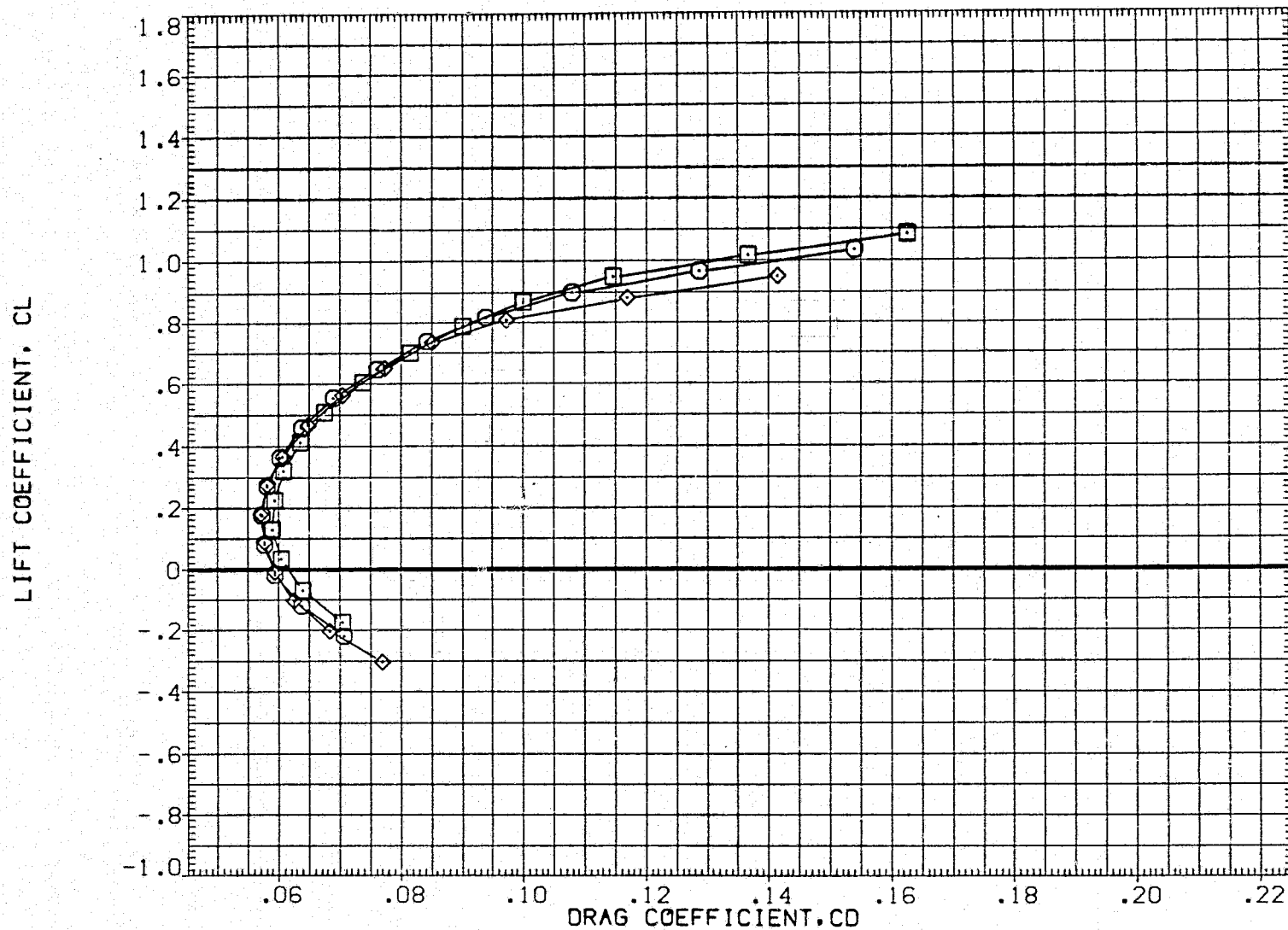


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY  
(A) MACH = .30



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
(RGM117)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000	SQ. FT.
(RGM120)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	13.000	.000	LREF	327.8000	IN.
(RGM119)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

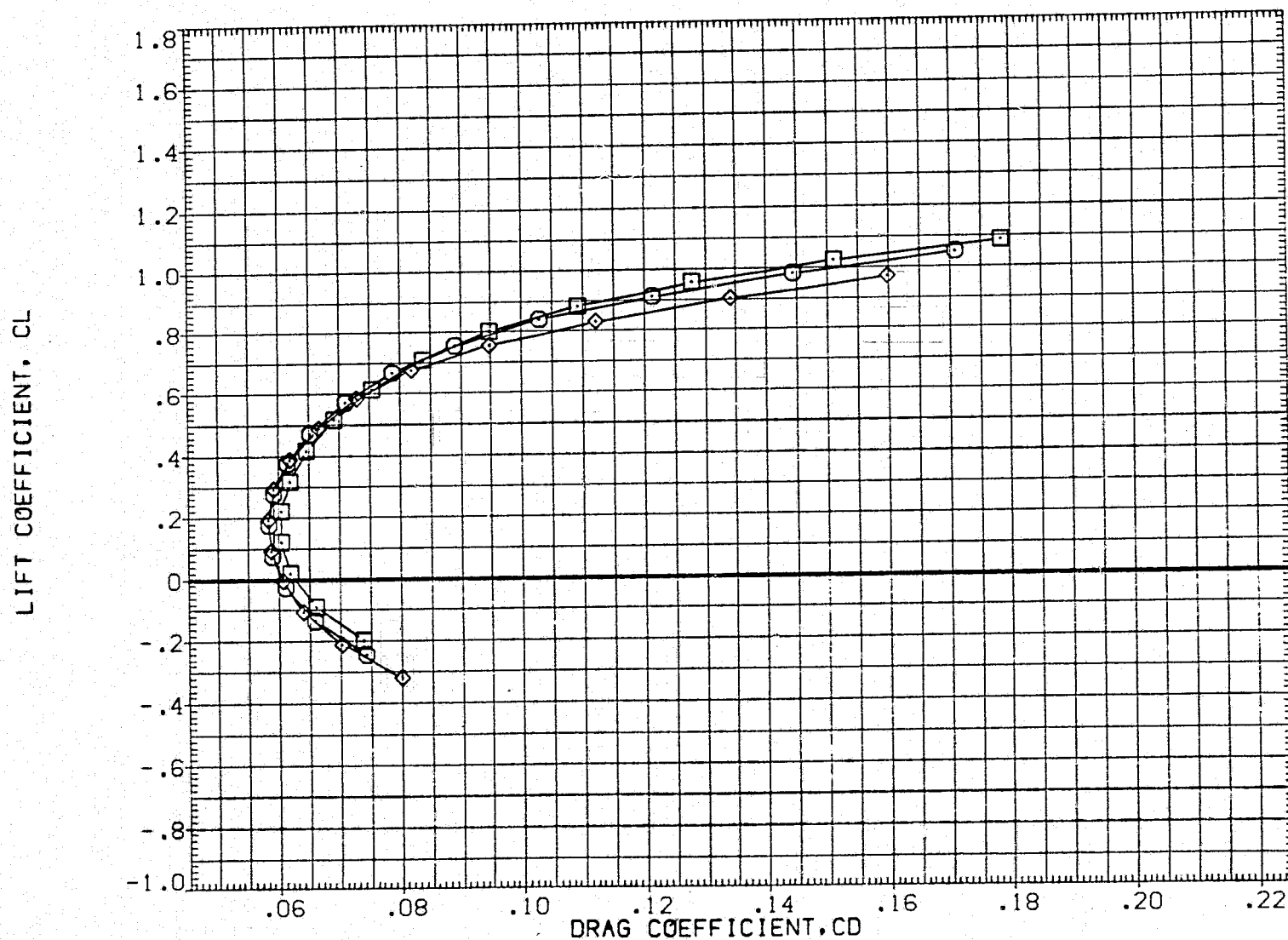


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY  
(B) MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-18	ELV-08	S5-6	REFERENCE INFORMATION		
(RGM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	.000	3.000	.000	SREF	5500.0000	SQ. FT.
(RGM120)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	10.000	13.000	.000	LREF	327.8000	IN.
(RGM119)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	-10.000	-7.000	.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

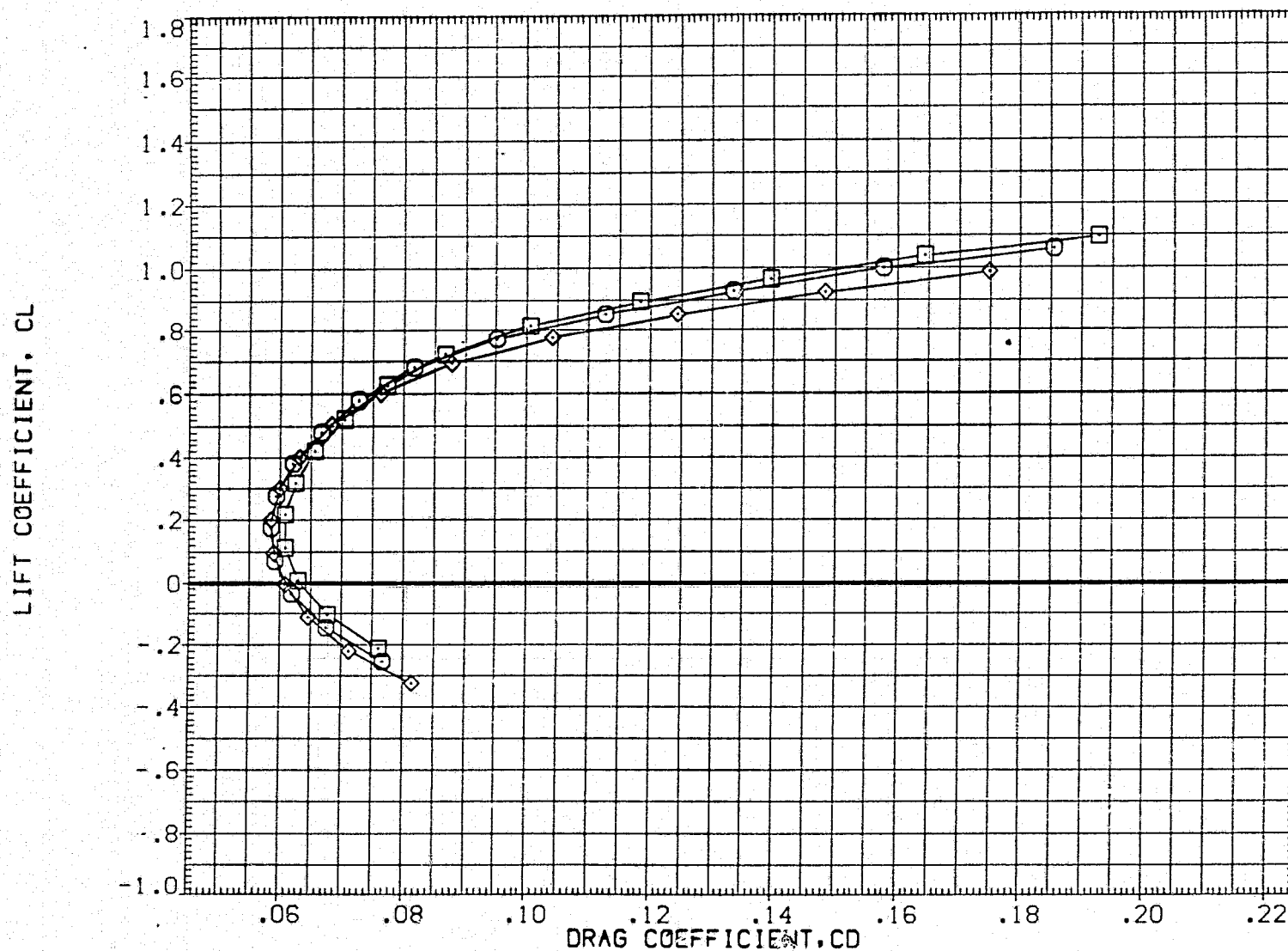


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-18	ELV-08	SS-6	REFERENCE INFORMATION		
(RGM117)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000	SQ.FT.
(RGM120)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	13.000	.000	LREF	327.8000	IN.
(RGM119)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000	IN.
						YMRP	1339.9100	IN. XC
						ZMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

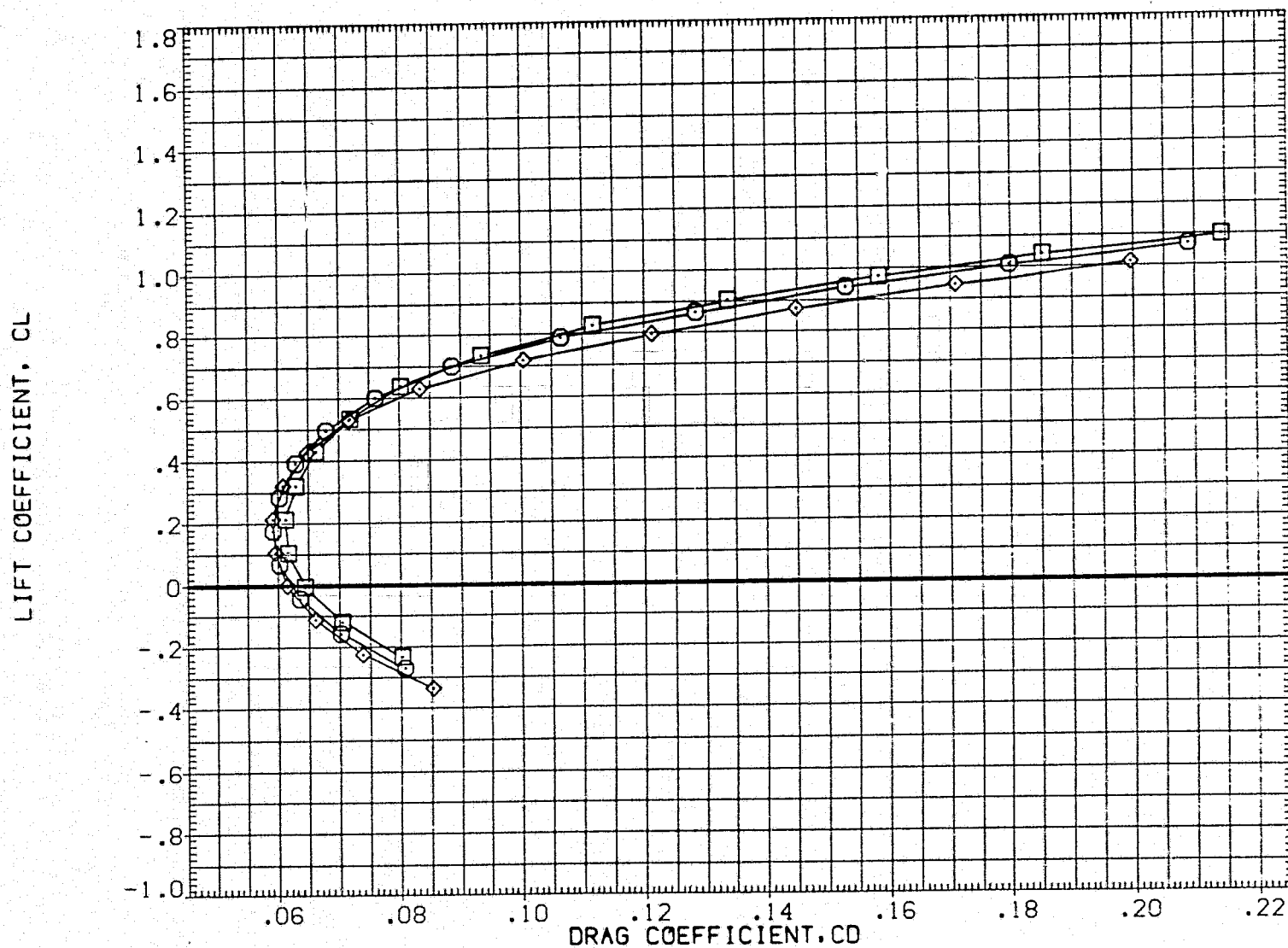


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY  
(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
(RSM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000	SQ.FT.
(RSM120)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	13.000	.000	LREF	327.8000	IN.
(RSM119)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000	IN.
						XMRP	1339.9100	N. XC
						YMRP	.0000	N. YC
						ZMRP	190.7500	N. ZC
						SCALE	.0300	

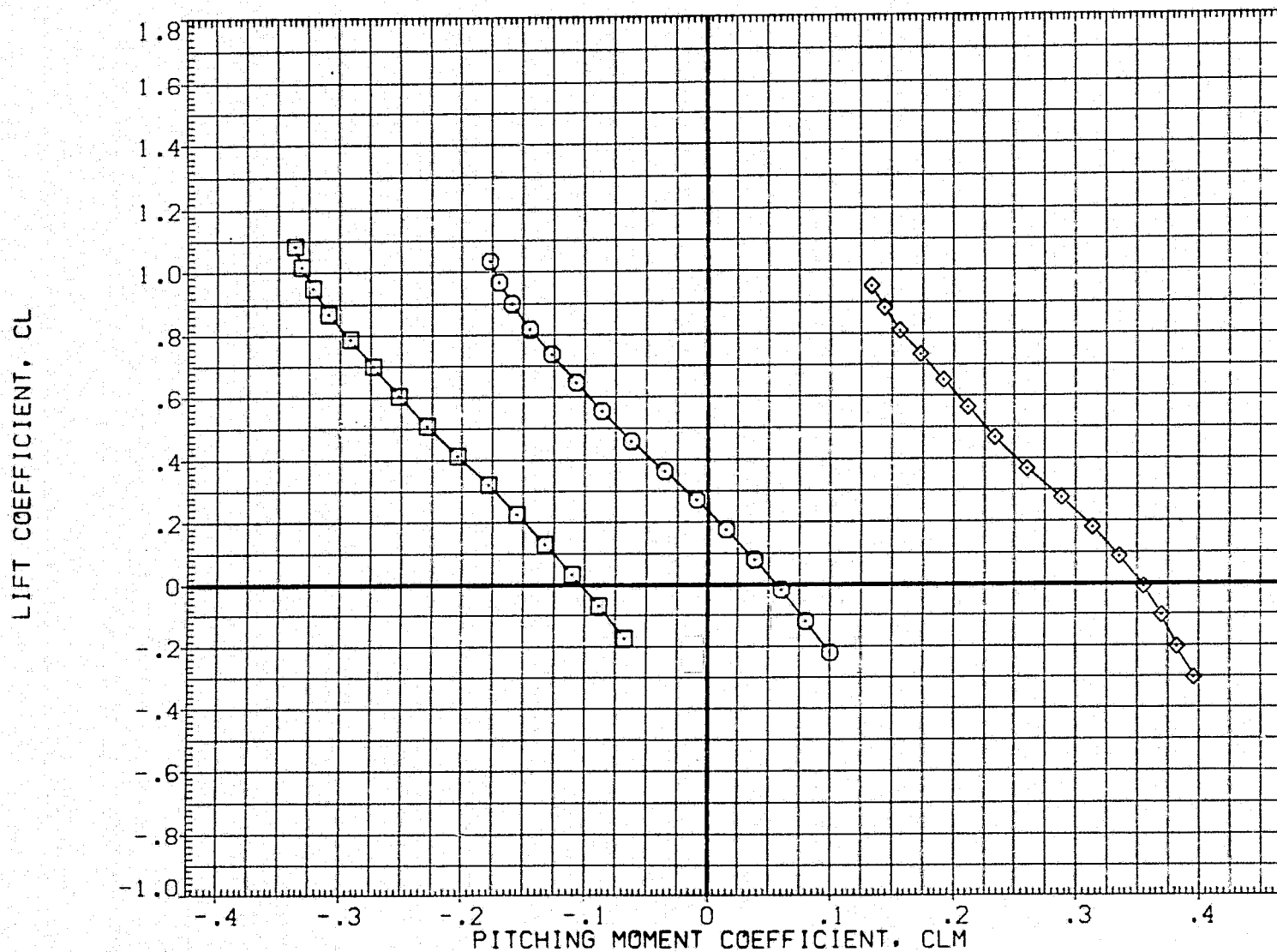


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY

(A) MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION		
(RGM117)	○ CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000	SQ.FT.
(RGM120)	□ CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	13.000	.000	LREF	327.8000	IN.
(RGM119)	◇ CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

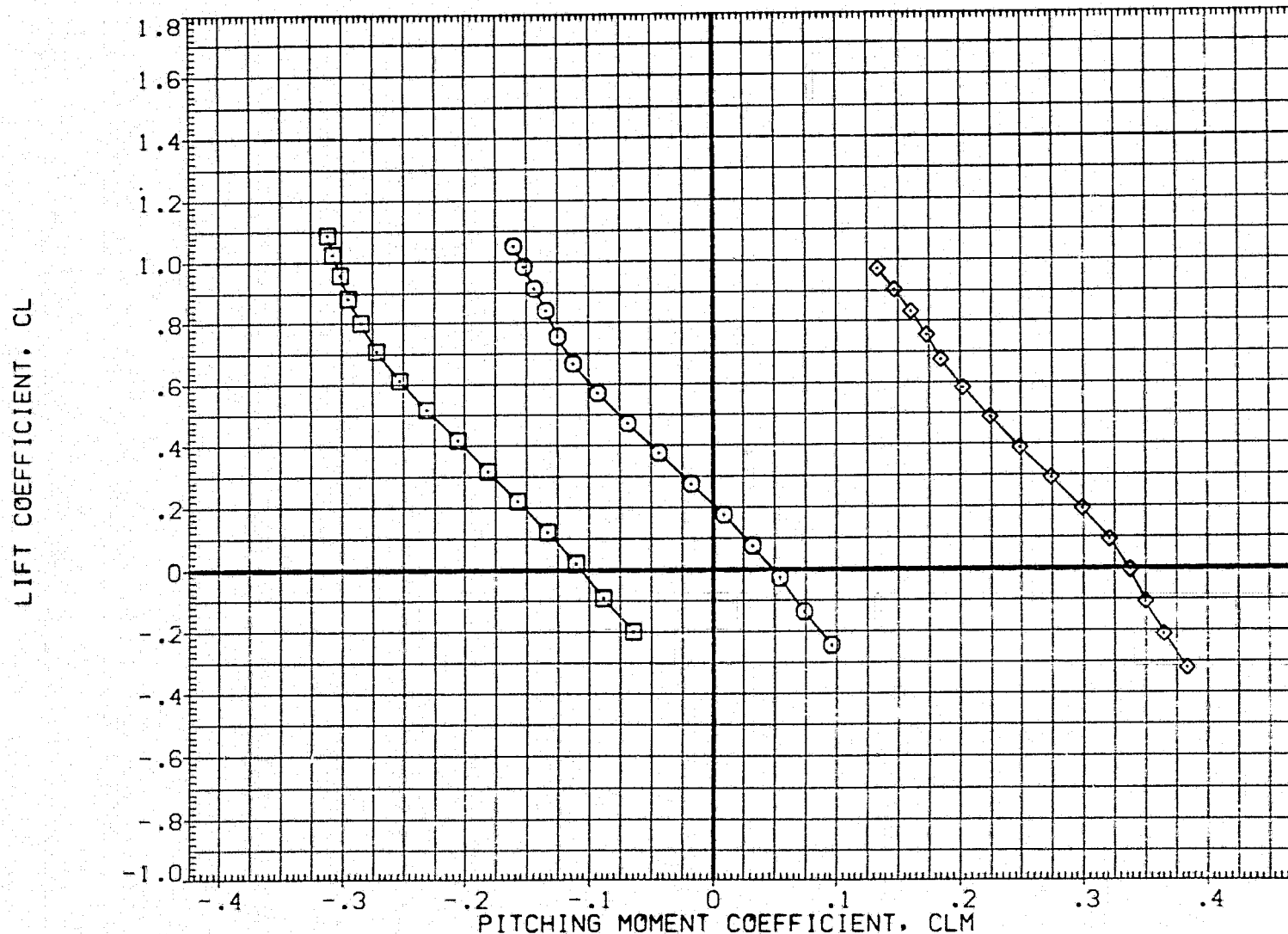


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY  
(B) MACH  $\approx$  .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION		
(RGM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000	50. FT.
(RGM120)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	13.000	.000	LREF	327.8000	IN.
(RGM119)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000	IN.
						XMWP	1339.9100	IN. XC
						YMWP	.0000	IN. YC
						ZMWP	190.7500	IN. ZC
						SCALE	.0300	

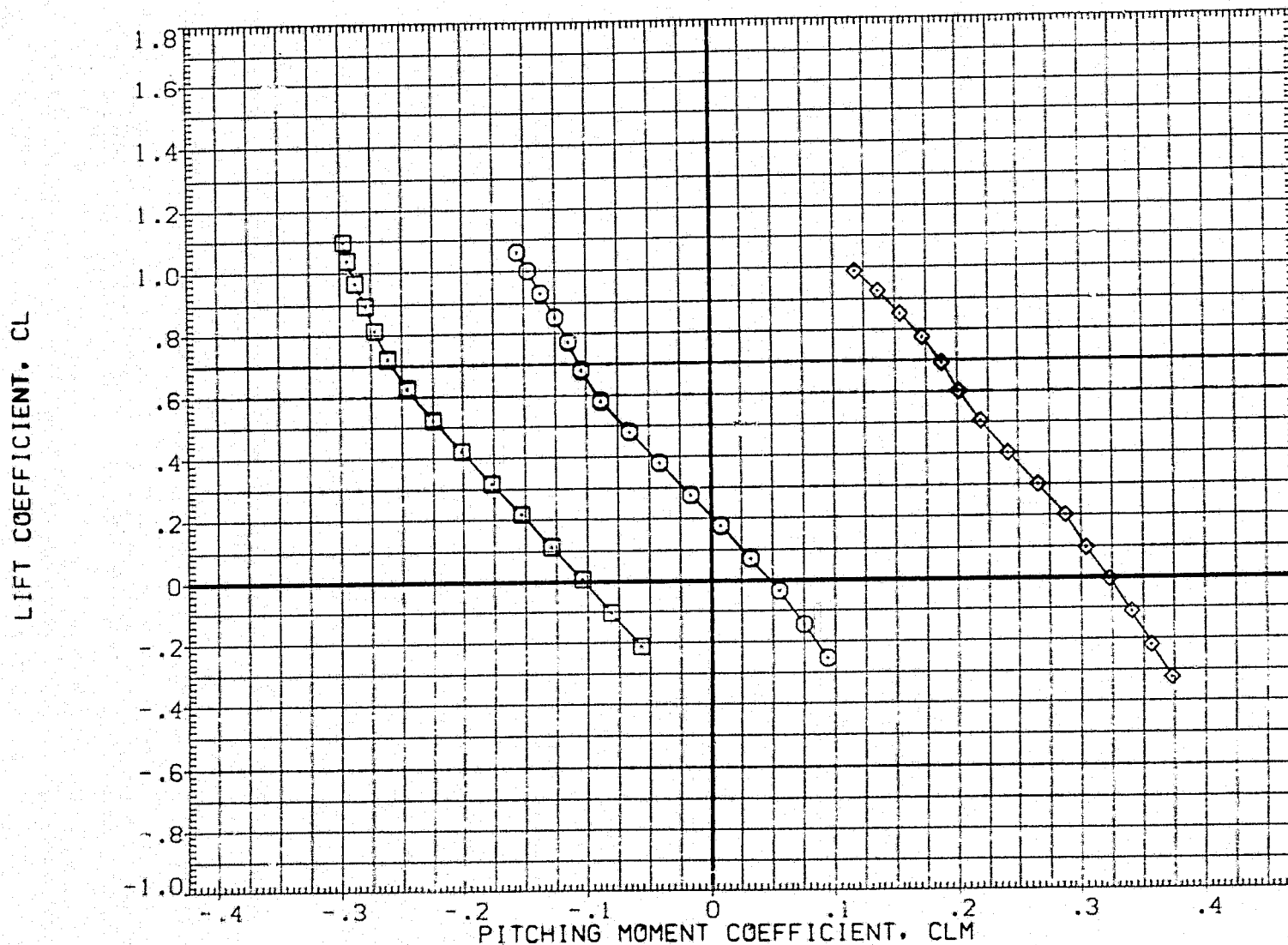


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-18	ELV-08	SS-6	REFERENCE INFORMATION		
(RGM117)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000	SQ.FT.
(RGM120)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	13.000	.000	LREF	327.8000	IN.
(RGM119)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

LIFT COEFFICIENT, CL

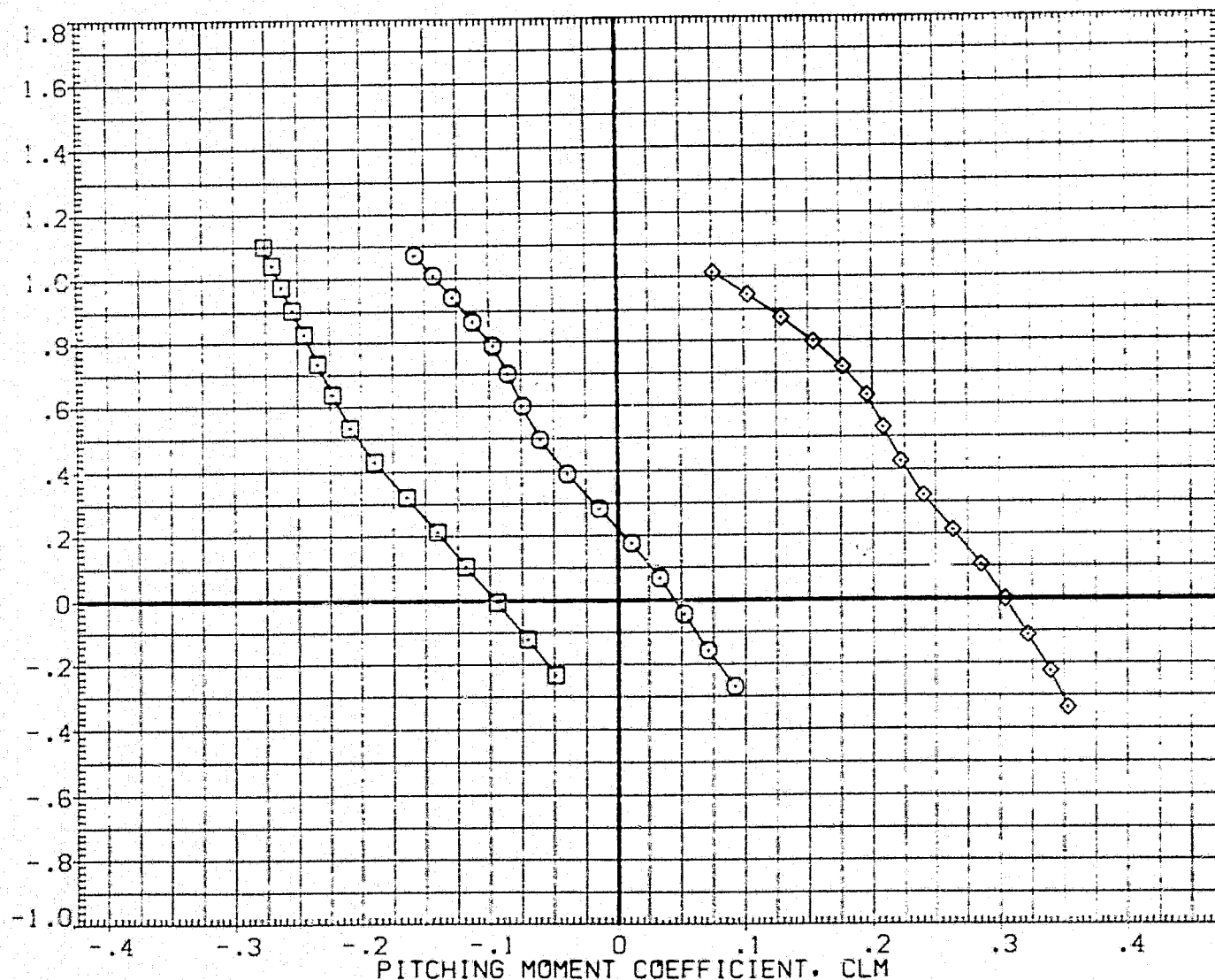


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY  
(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM117) □ CAS K1 FO H15.6 VS.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM120) □ CAS K1 FO H15.6 VS.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM119) ◇ CAS K1 FO H15.6 VS.1 (PLUS. ORB TC5 AT38.3 )

STAB

ELV-18

ELV-08

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

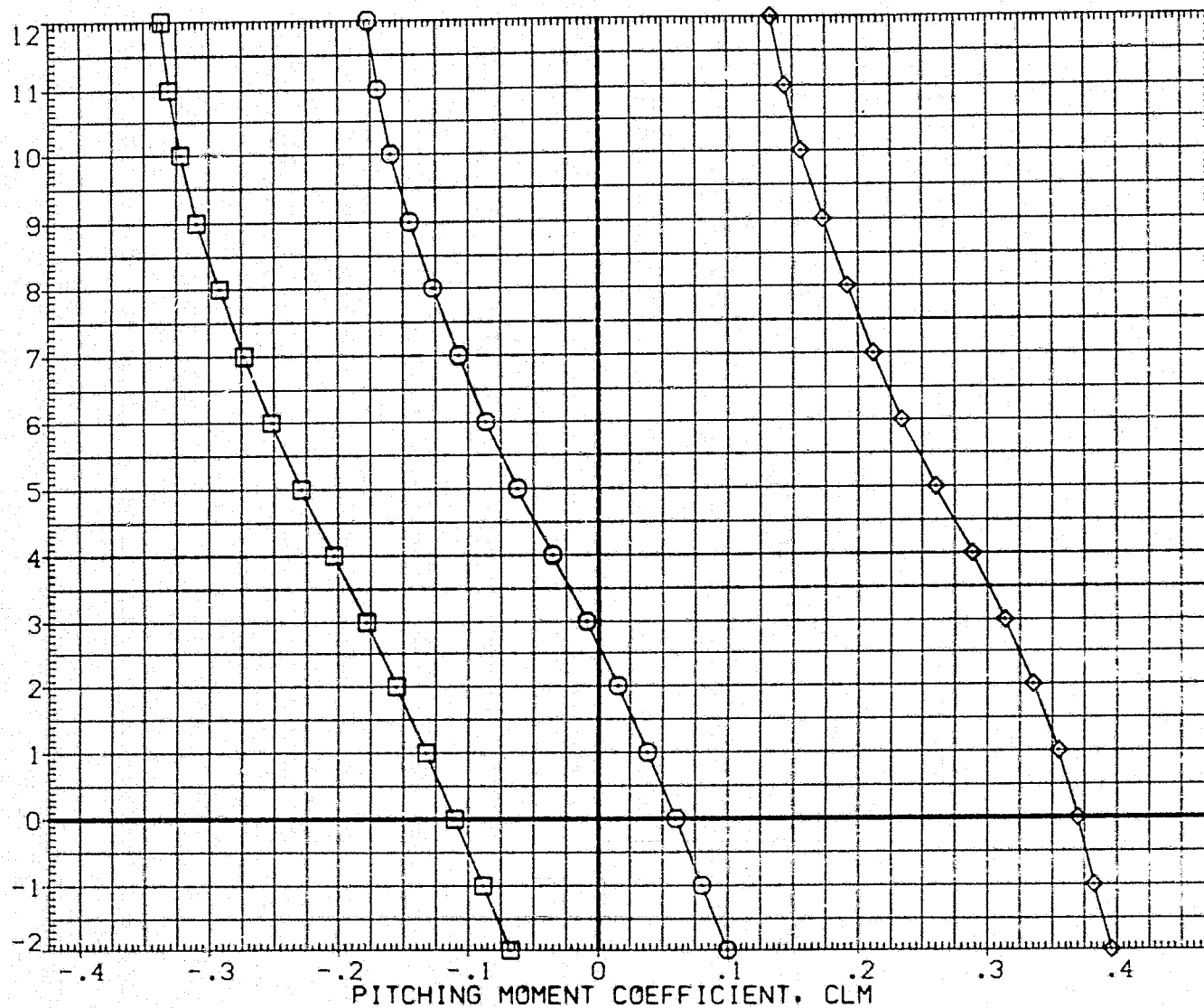


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY

(A) MACH = .30

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	S5-6	REFERENCE INFORMATION	
(RGM117)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000 SQ. FT.
(RGM120)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	13.000	.000	LREF	327.8000 IN.
(RSM119)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

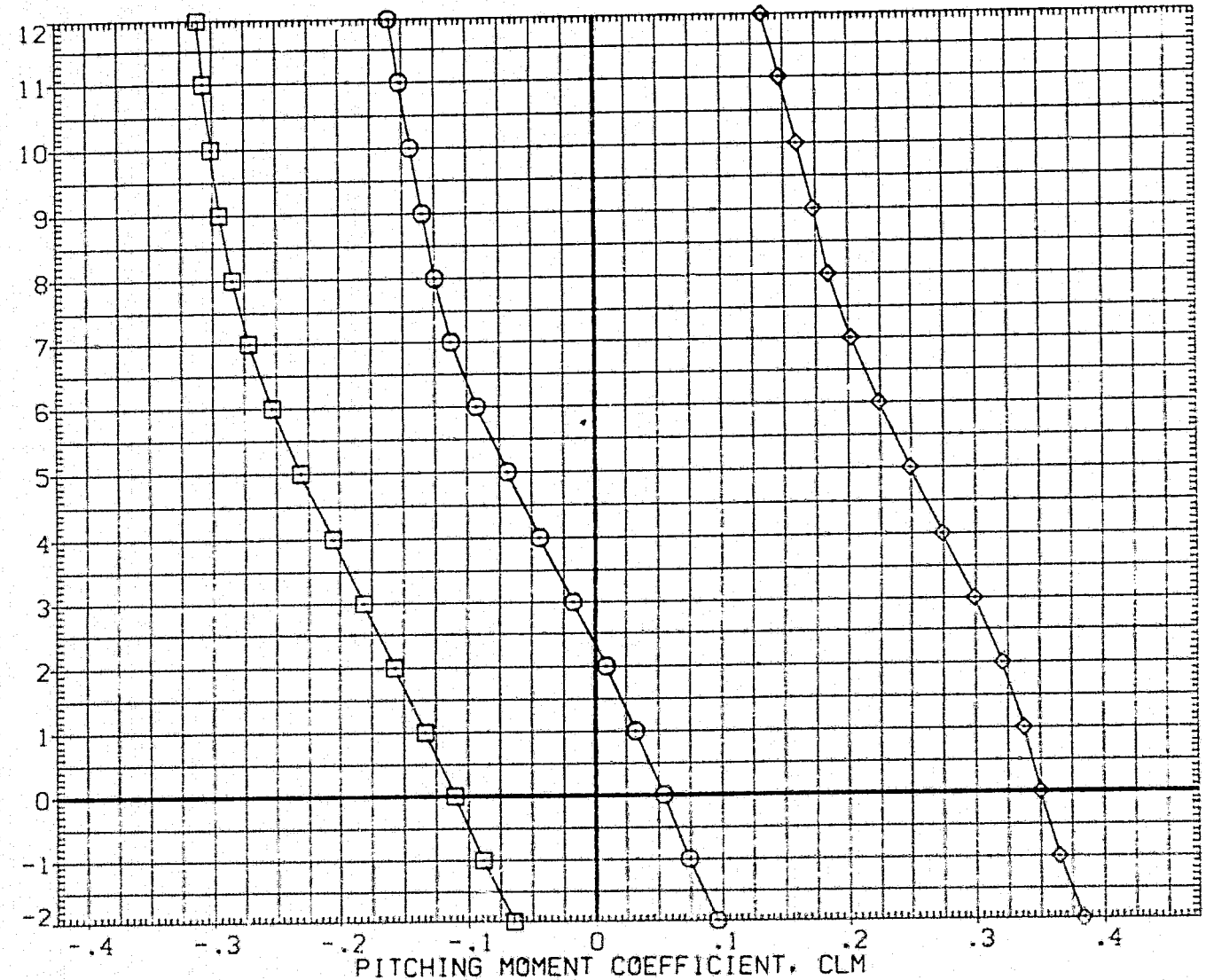


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY  
(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
(RGM117)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000	50. FT.
(RGM120)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	-10.000	13.000	.000	LREF	327.8000	12.
(RGM119)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000	12.
						XMRP	1339.9100	12. XC
						YMRP	.0000	12. YC
						ZMRP	190.7500	12. ZC
						SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

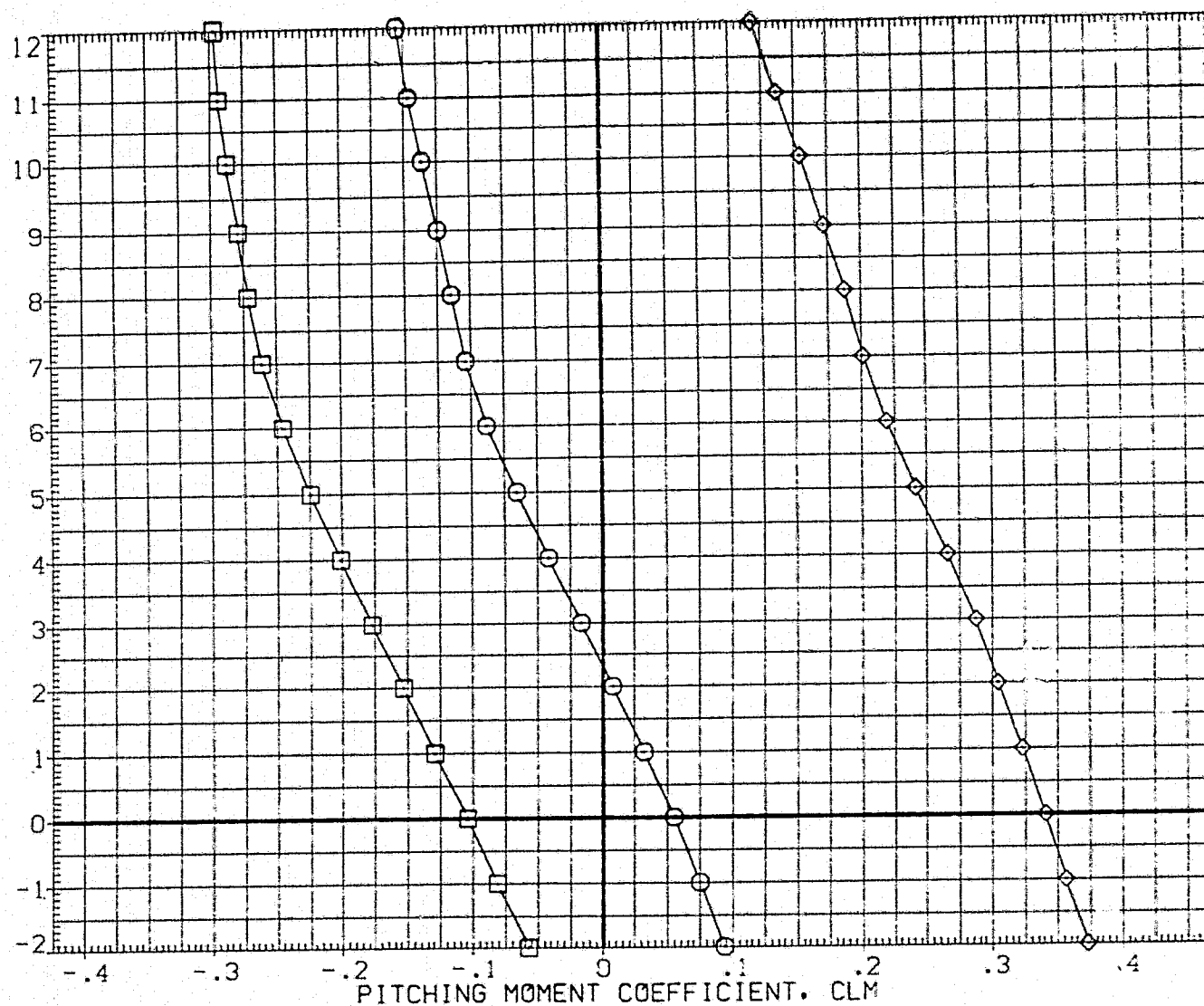


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY  
(C)MACH = .60



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
(RGM117)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	.000	3.000	.000	SREF	5500.0000	SQ.FT.
(RGM120)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	13.000	.000	LREF	327.8000	IN.
(RGM119)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	-10.000	-7.000	.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

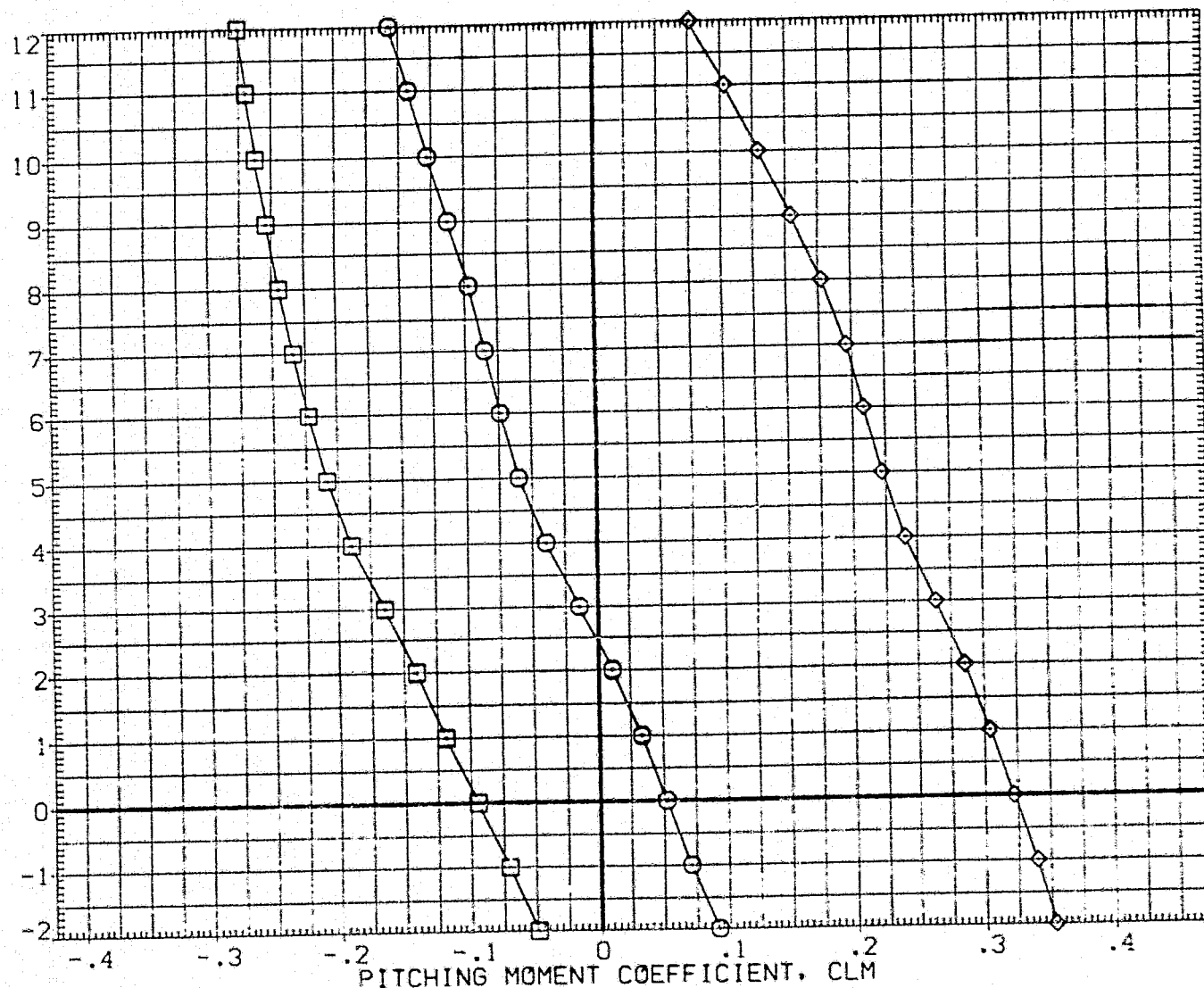


FIG. 238 747+ORB(4 DEG), ELEVATOR EFFECT, FLAPS UP FERRY

(D)MACH = .70

DATA SET SYMBOL      CONFIGURATION DESCRIPTION  
 (RGM061)      □      BTWT-1431CA5 K1 F20 H15.6 V9.1  
 (RGM062)      □      BTWT-1431CA5 K1 F20 H15.6 V9.1

STAB	ELV-1B	ELV-0B	S5-6
1.000	.000	3.000	45.000
1.000	10.000	13.000	45.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.9000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

LIFT COEFFICIENT, CL

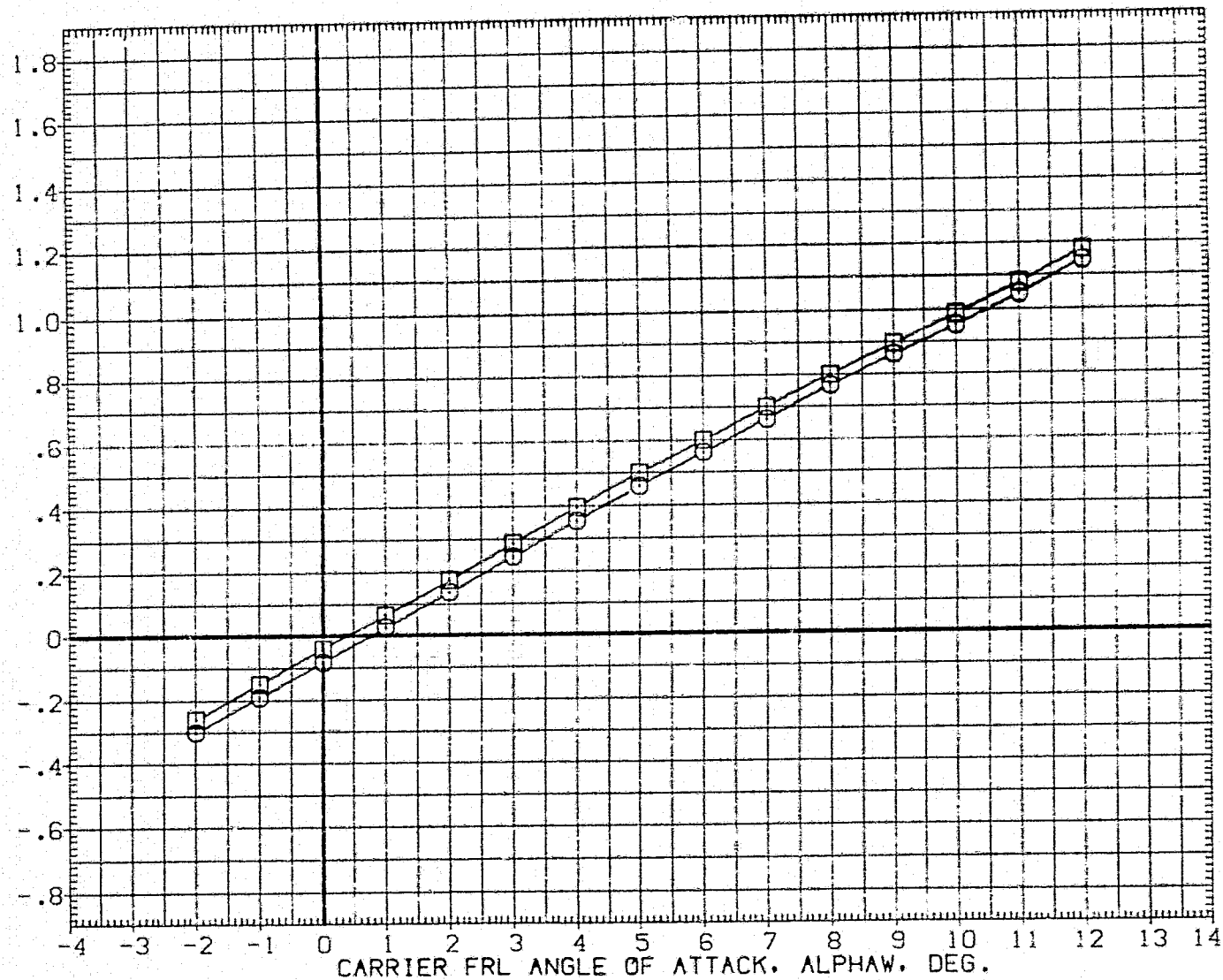


FIG. 239 747 ALONE, ELEVATOR EFFECT, FLAPS 20

(A) MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM061)  $\square$  BTWT-1431CAS K1 F20 H15.6 V9.1  
 (RGM062)  $\square$  BTWT-1431CAS K1 F20 H15.6 V9.1

STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION	
1.000	.000	3.000	45.000	SREF	5500.0000 SQ.FT.
1.000	10.000	13.000	45.000	LREF	327.8000 IN.
				BREF	2348.0000 IN.
				XMRP	1339.9100 IN. XC
				YMRP	.0000 IN. YC
				ZMRP	190.7500 IN. ZC
				SCALE	.0300

LIFT COEFFICIENT, CL

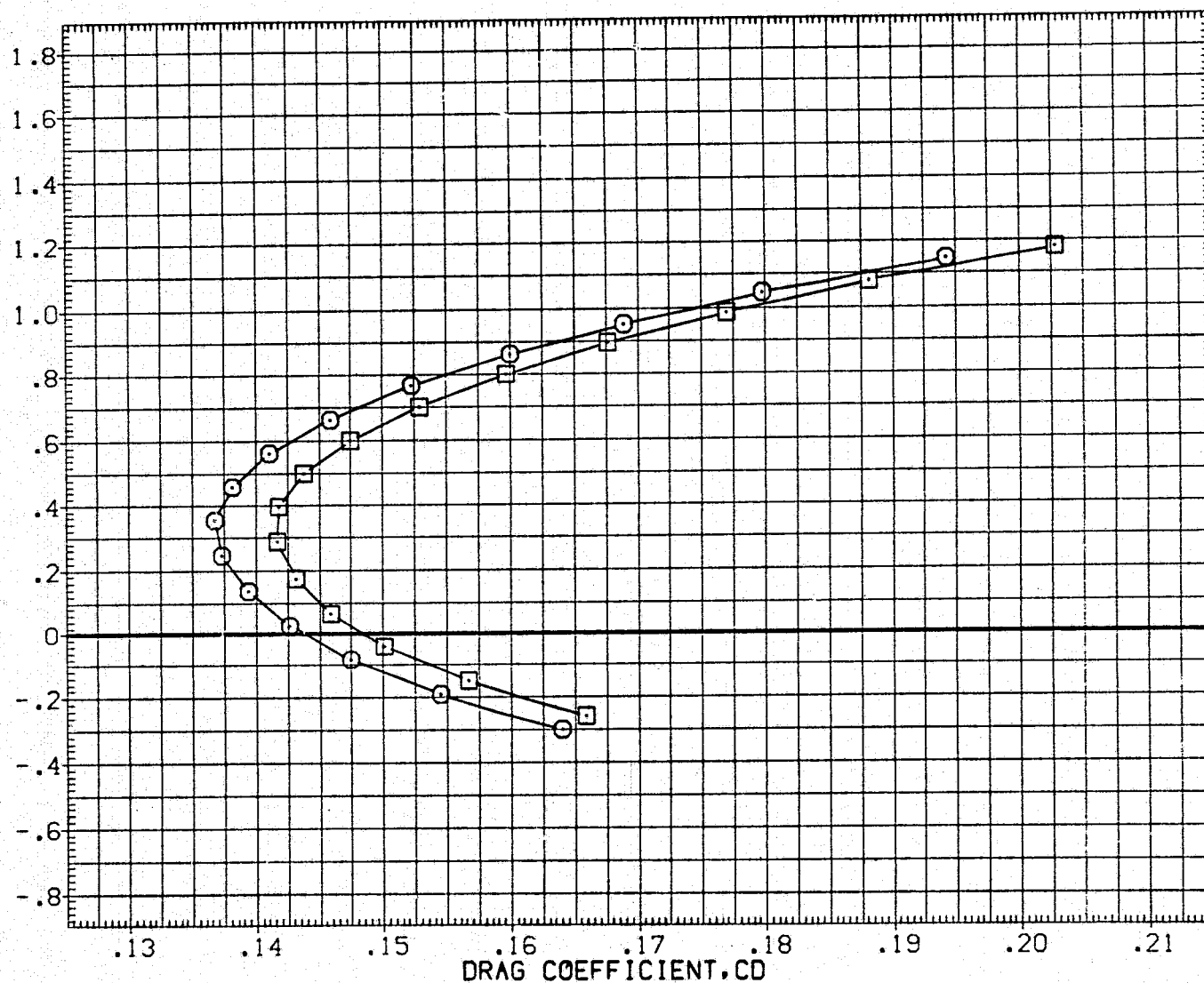


FIG. 239 747 ALONE, ELEVATOR EFFECT, FLAPS 20  
 (A) MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM061)  $\square$  BTWT-1431CA5 K1 F20 H15.6 V9.1  
 (RGM062)  $\square$  BTWT-1431CA5 K1 F20 H15.6 V9.1

STAB	ELV-1B	ELV-0B	S5-6
1.000	.000	3.000	45.000
1.000	10.000	13.000	45.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

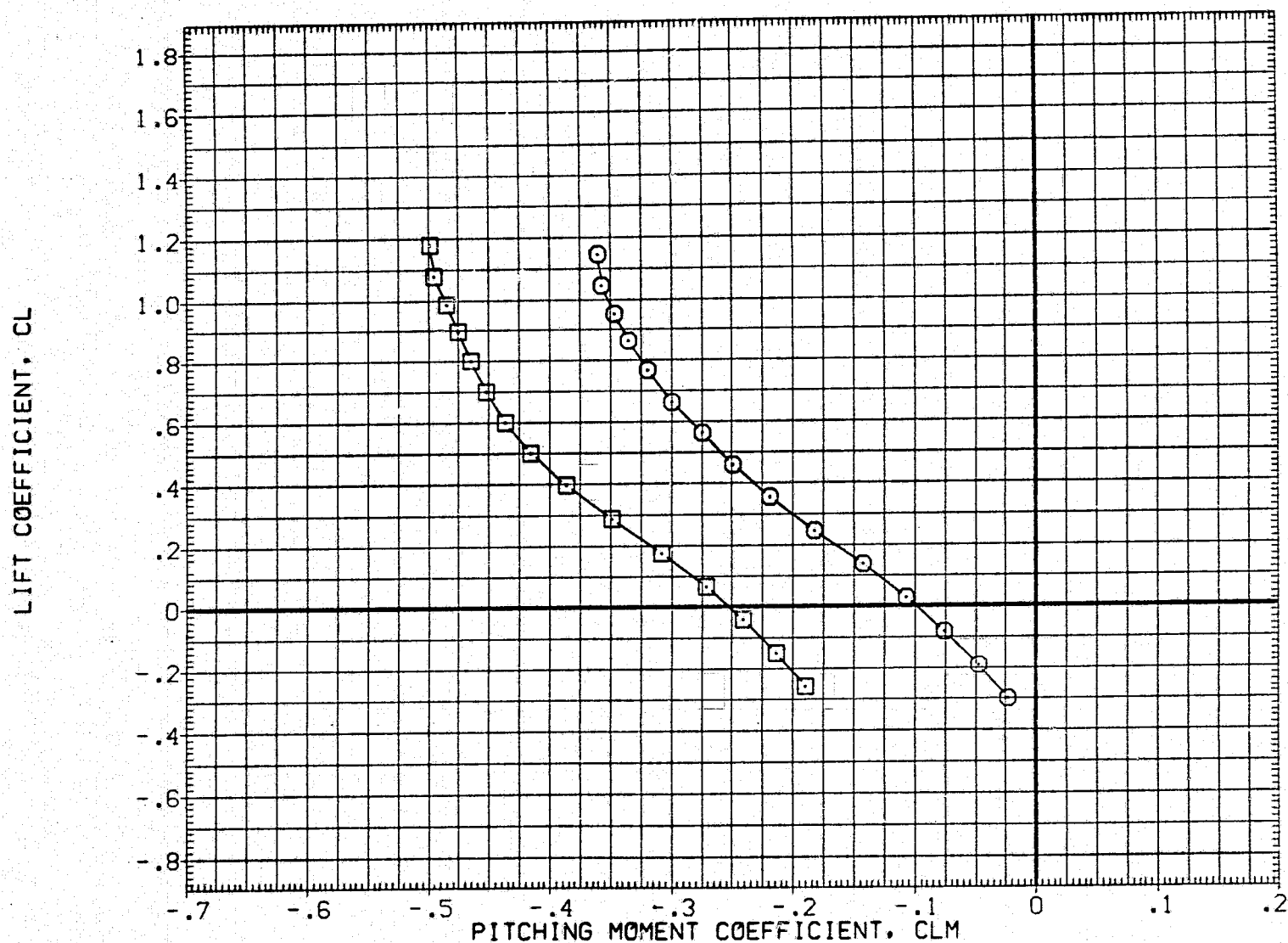


FIG. 239 747 ALONE, ELEVATOR EFFECT, FLAPS 20

(A) MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM061)  $\square$  BTWT-1431CA5 K1 F20 H15.6 V9.1  
 (RGM062)  $\square$  BTWT-1431CA5 K1 F20 H15.6 V9.1

STAB	ELV-1B	ELV-0B	SS-6	REFERENCE INFORMATION		
1.000	.000	3.000	45.000	SREF	5500.0000	SQ.FT.
1.000	10.000	13.000	45.000	LREF	327.8000	IN.
				BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

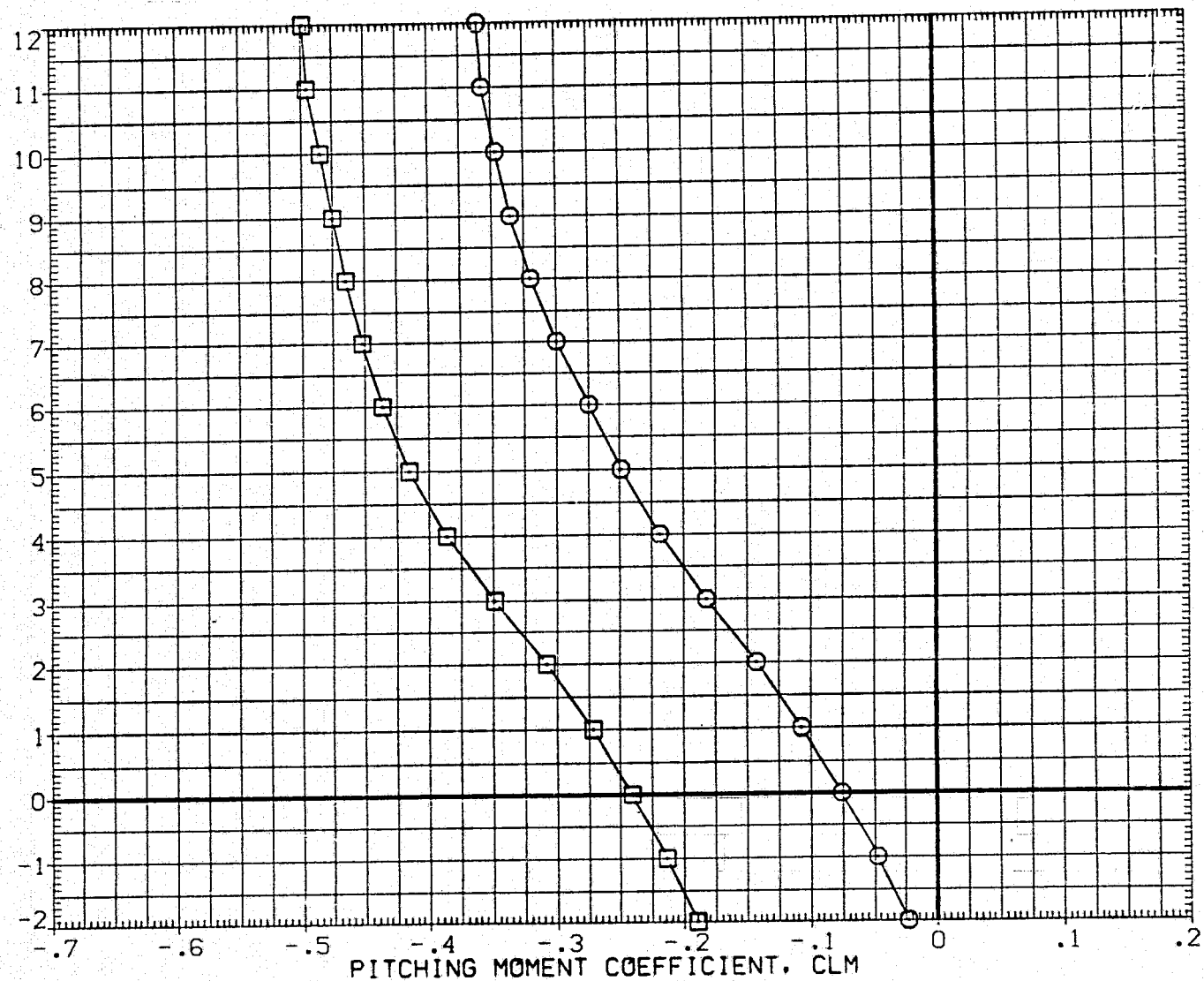


FIG. 239 747 ALONE, ELEVATOR EFFECT, FLAPS 20

(A) MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM081)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)
(RGM087)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)

STAB	ICR3	S5-6
1.000	7.850	20.000
1.000	7.850	20.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ. FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

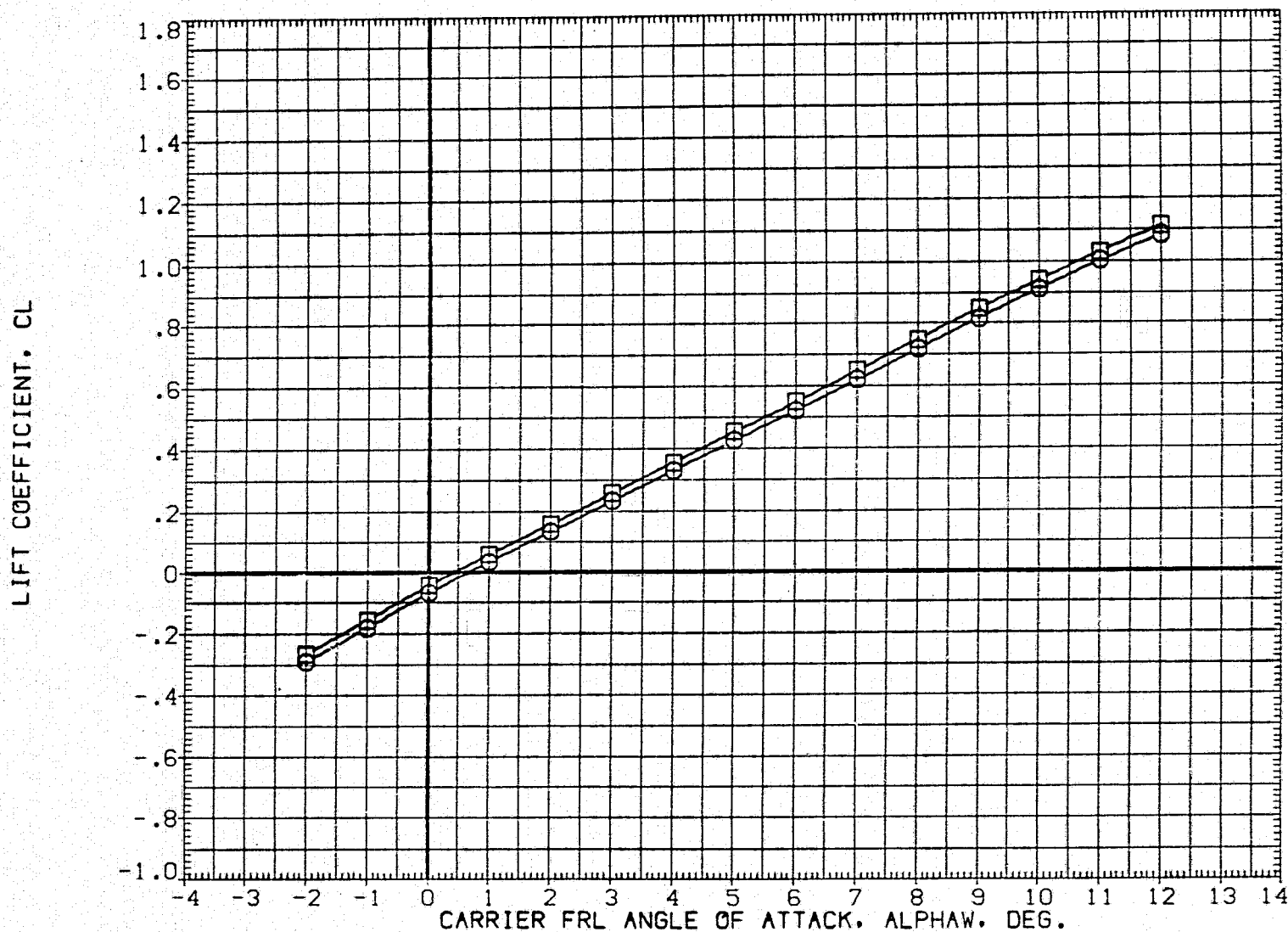


FIG. 240 747+ORB(8 DEG), EFFECT OF ORBITER ELEVON, FLAPS UP

(A) MACH = .50



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )  
 (RGM087)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

STAB 10RB S5-6  
 1.000 7.850 20.000  
 1.000 7.850 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

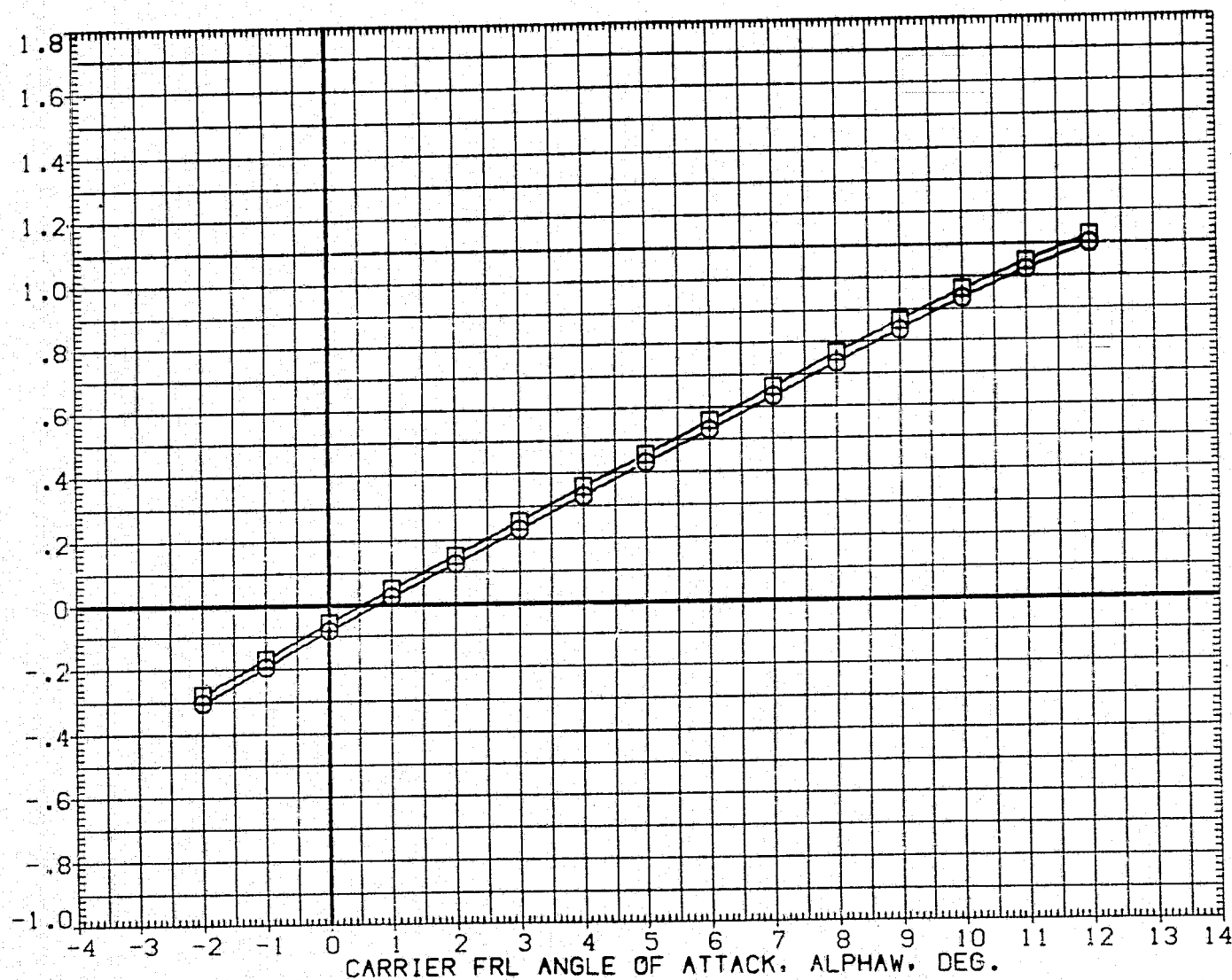


FIG. 240 747+ORB(8 DEG), EFFECT OF ORBITER ELEVON, FLAPS UP

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)	○	CAS	K1	FO	H15.6	V9.1	(PLUS. ORB TC5 AT38.2 )
(RGM087)	□	CAS	K1	FO	H15.6	V9.1	(PLUS. ORB TC5 AT38.2 )

STAB

IORB

SS-6

1.000

7.850

20.000

1.000

7.850

20.000

REFERENCE INFORMATION

SREF	5500.0000	SO.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

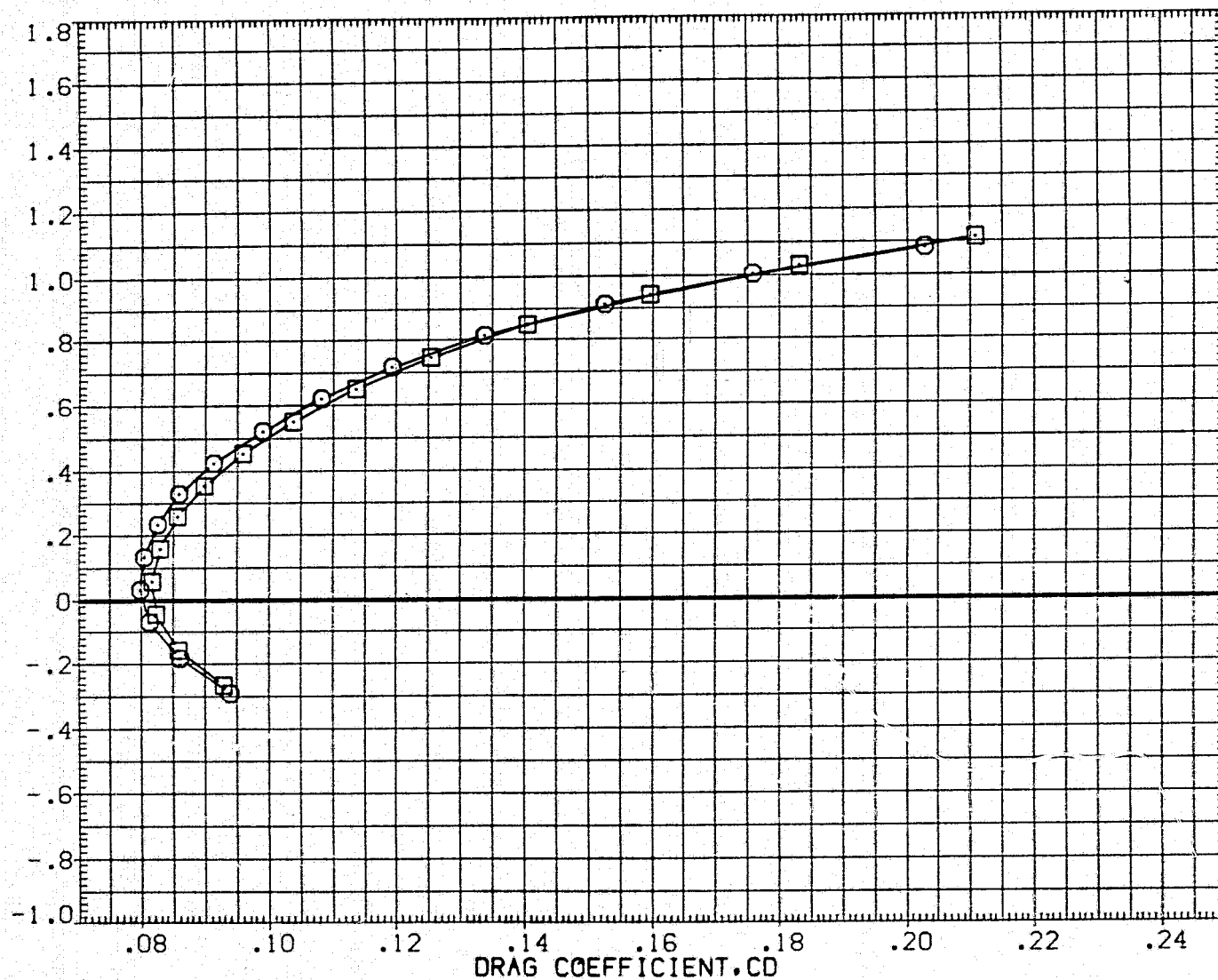


FIG. 240 747+ORB(8 DEG), EFFECT OF ORBITER ELEVON, FLAPS UP

(A)MACH = .50

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM081)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	7.850	20.000
(RGM087)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	7.850	20.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

LIFT COEFFICIENT, CL

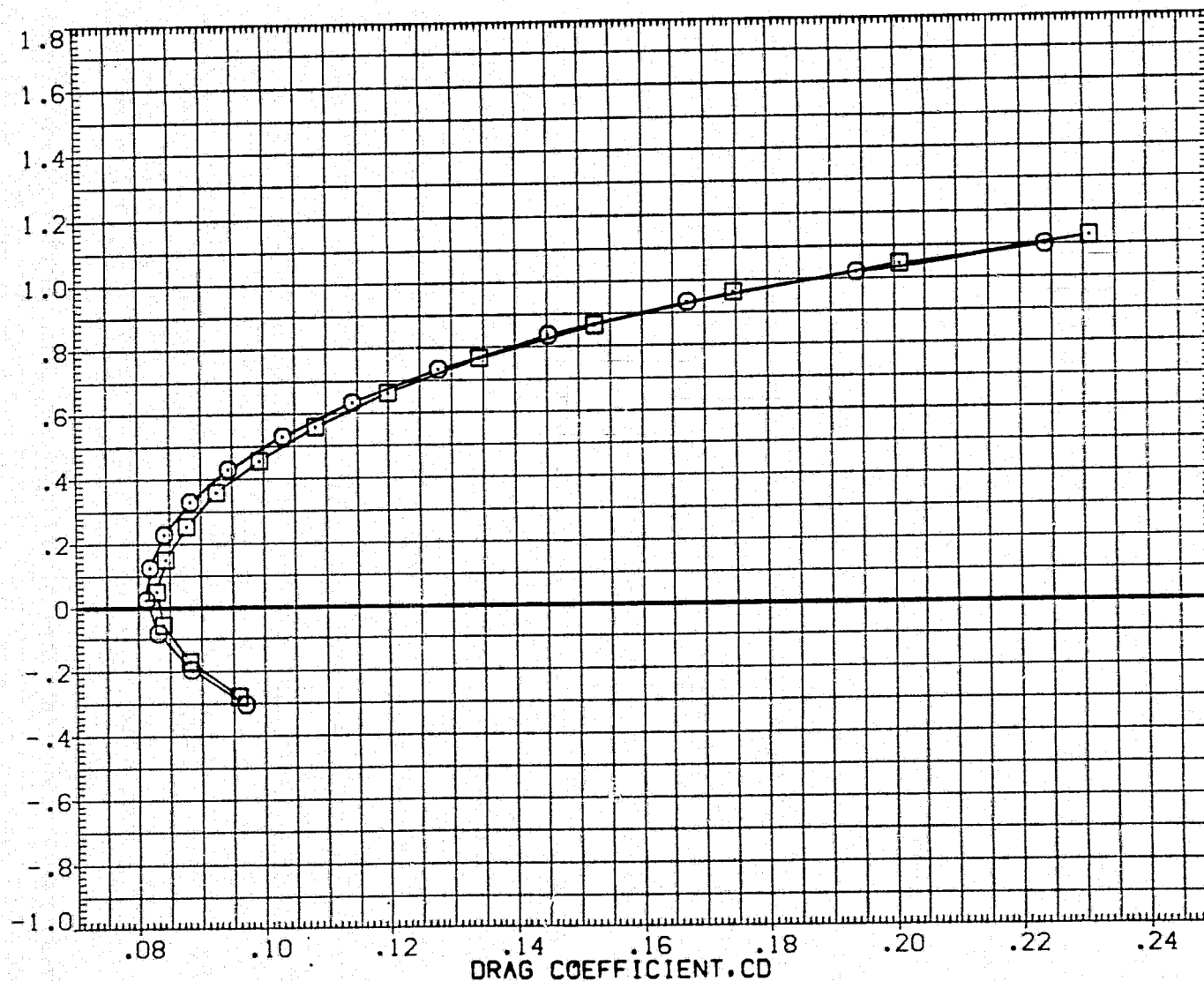


FIG. 240 747+ORB(8 DEG), EFFECT OF ORBITER ELEVON, FLAPS UP  
(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM081) CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM087) CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB 10RB S5-6  
 1.000 7.850 20.000  
 1.000 7.850 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

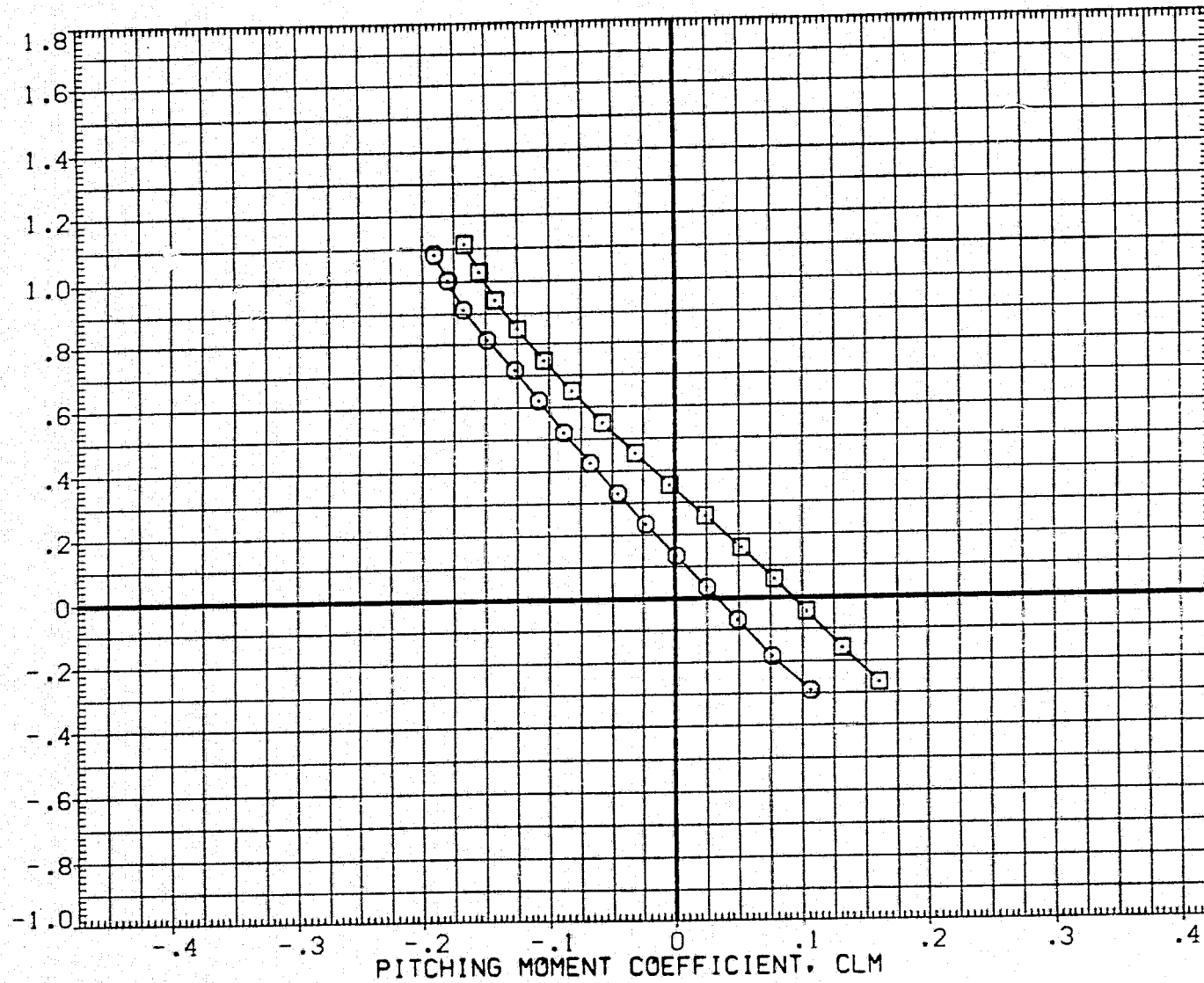


FIG. 240 747+ORB(8 DEG), EFFECT OF ORBITER ELEVON, FLAPS UP

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM087)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

STAB 10RB S5-6  
 1.000 7.850 20.000  
 1.000 7.850 20.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

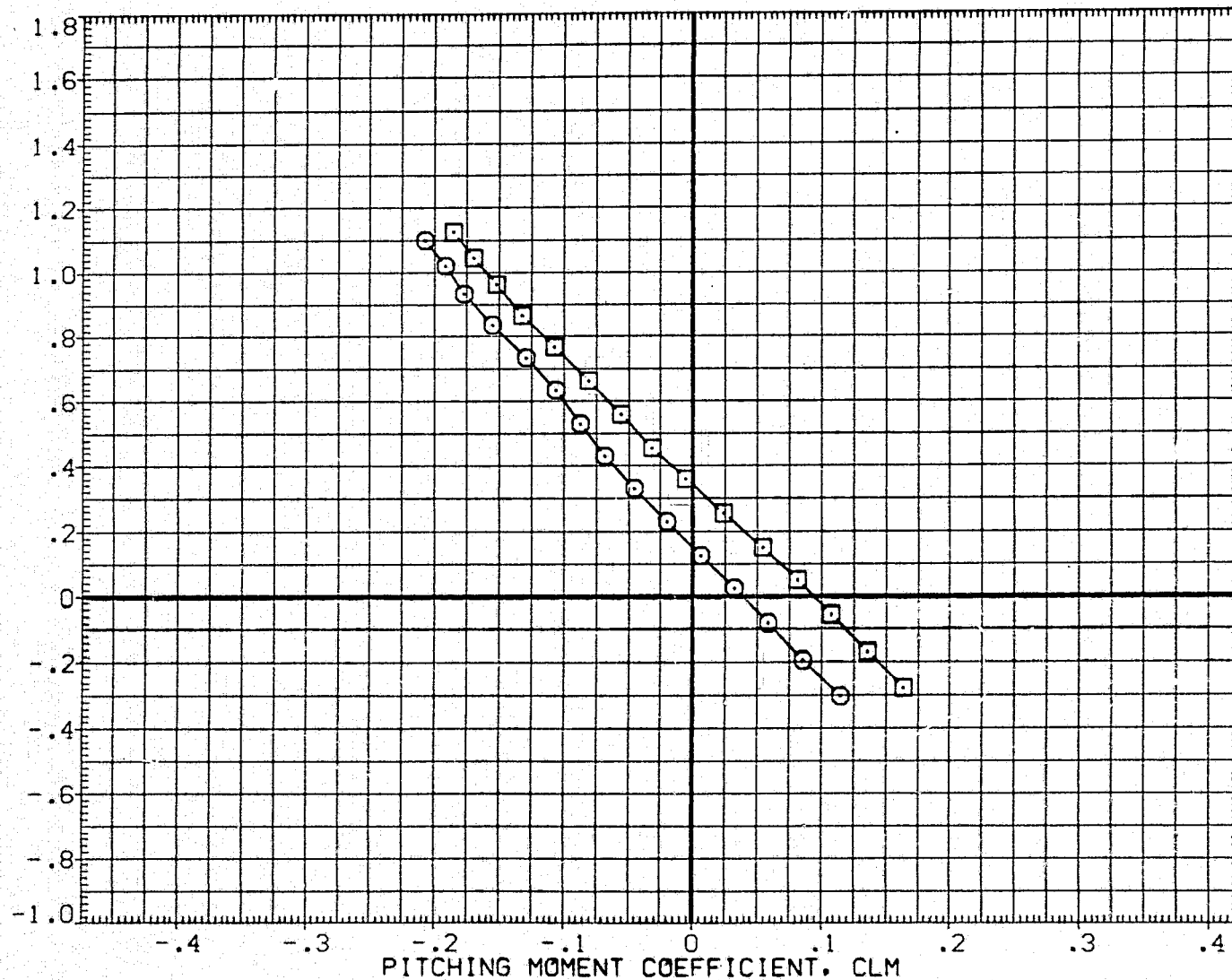


FIG. 240 747+ORB(8 DEG), EFFECT OF ORBITER ELEVON, FLAPS UP  
 (B)MACH = .60

DATA SET SYMBOL

CONFIGURATION DESCRIPTION

STAB

IORB

SS-6

REFERENCE INFORMATION

(RGM081)



CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

1.000

7.850

20.000

SREF 5500.0000 SQ.FT.

LREF 327.8000 IN.

BREF 2348.0000 IN.

XMRP 1339.9100 IN. XC

YMRP .0000 IN. YC

ZMRP 190.7500 IN. ZC

SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHAW, DEG.

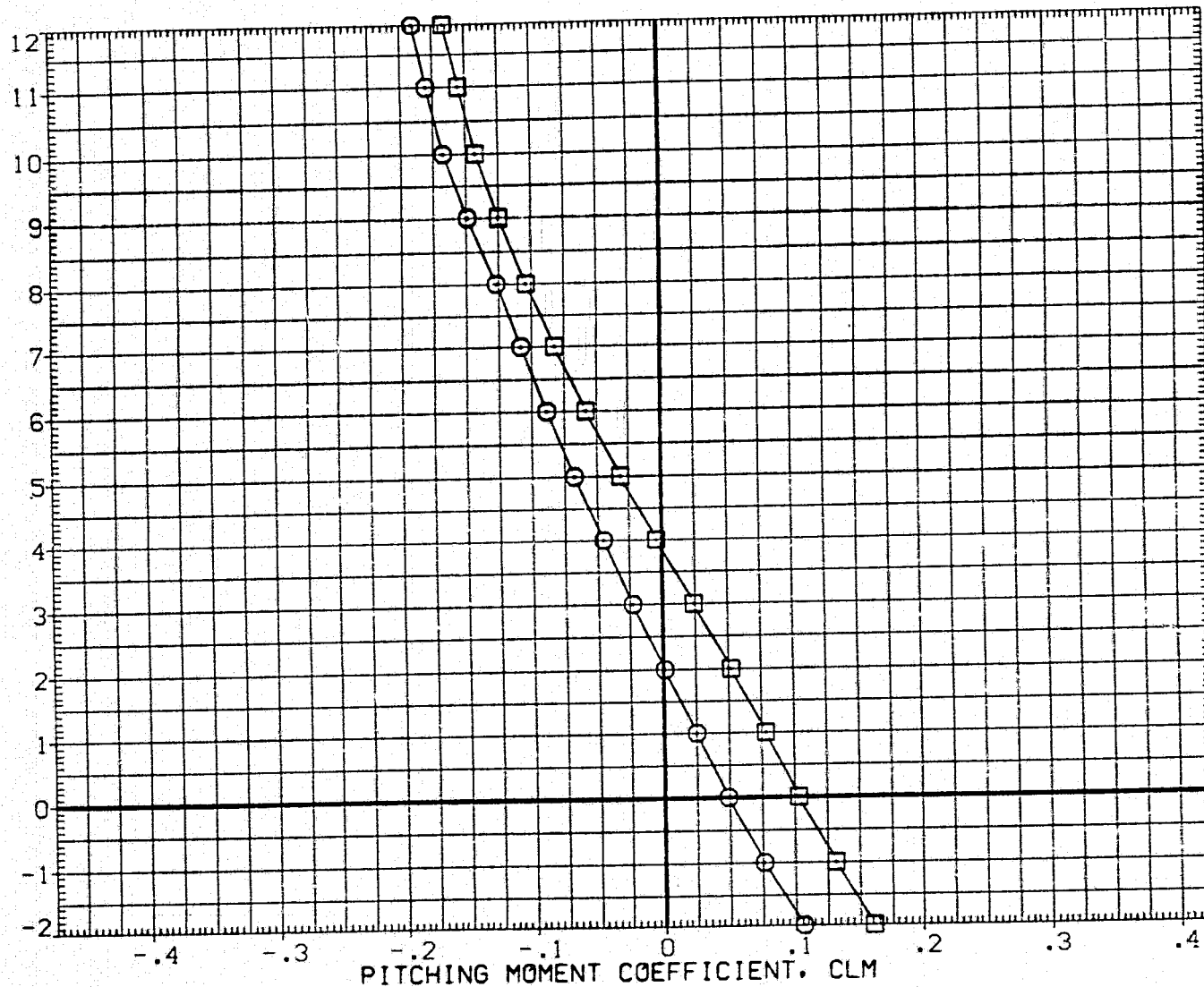


FIG. 240 747+ORB(8 DEG), EFFECT OF ORBITER ELEVON, FLAPS UP

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM081)	○ CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	7.850	20.000
(RGM087)	□ CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	7.850	20.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ. FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

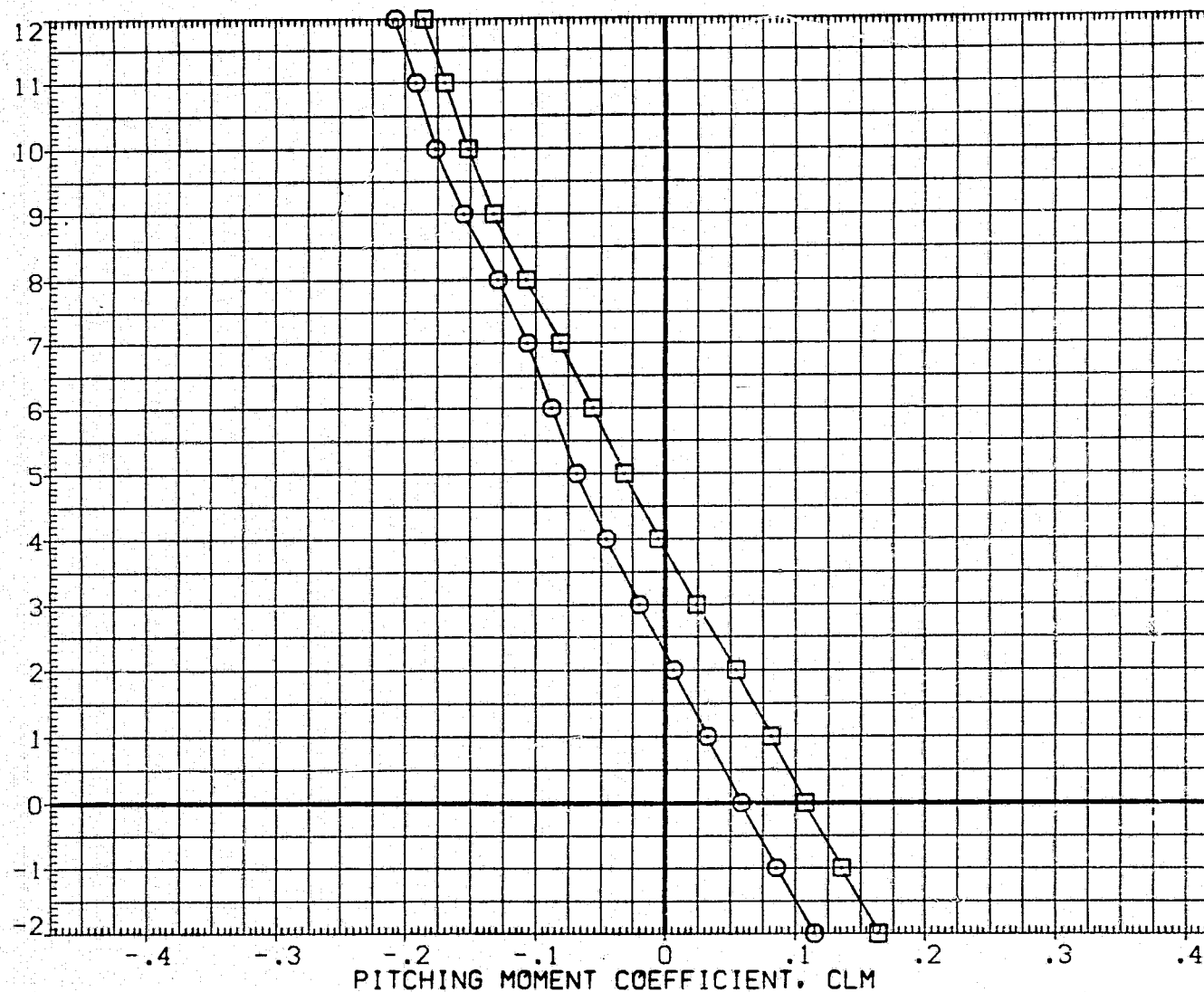


FIG. 240 747+ORB(8 DEG), EFFECT OF ORBITER ELEVON, FLAPS UP  
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM099)	CA5 K1 FO V9.1 (PLUS. ORB NOZ AT38.2A)
(RGM092)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)
(RGM091)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)

STAB	IORB	SS-6
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

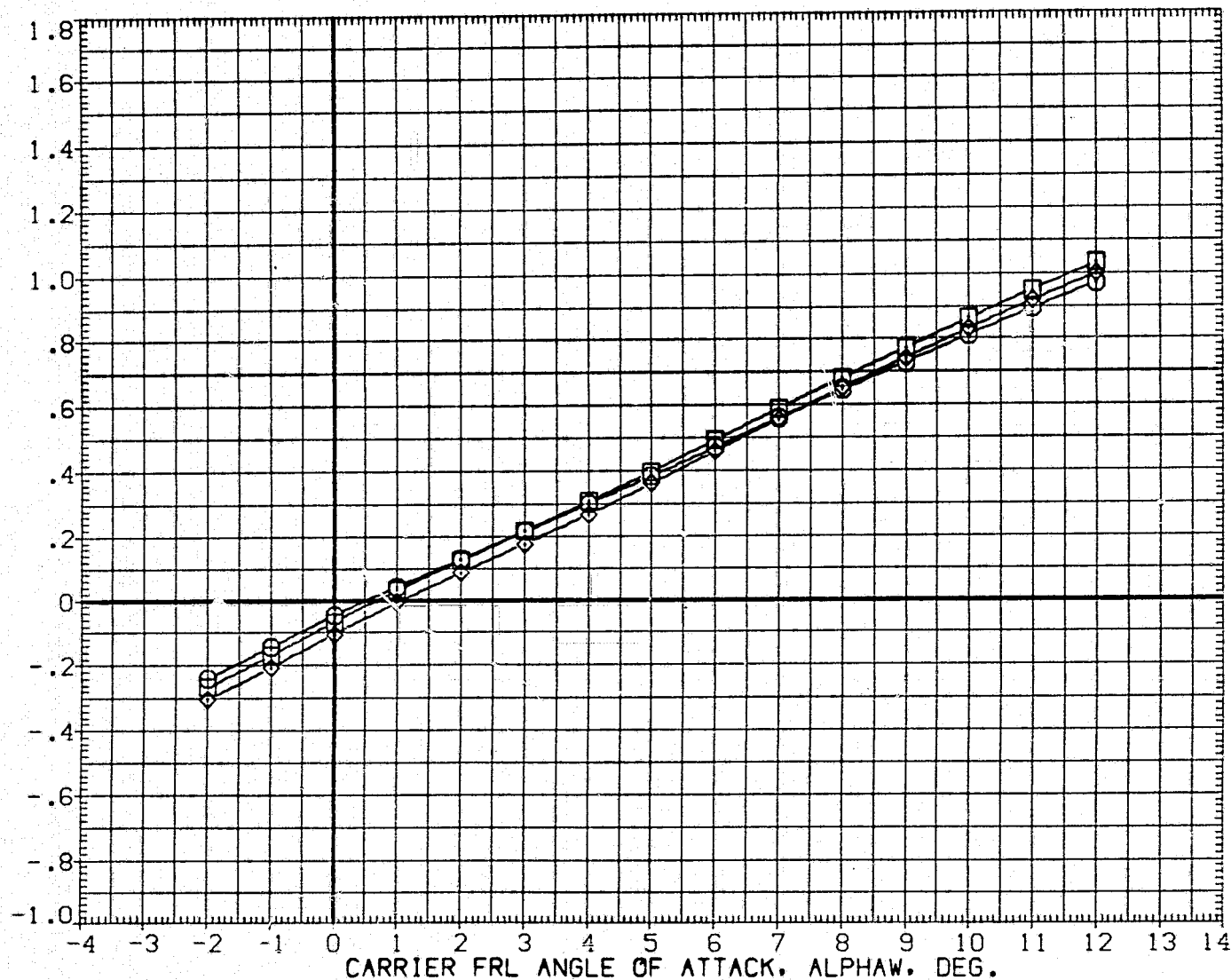


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(A)MACH = .30



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM099) □ CA5 KI FO V9.1 (PLUS. ORB NOZ AT38.2A)  
 (RGM092) ○ CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RGM091) ◇ CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB

IORB

S5-6

1.000 7.850 20.000  
 -2.000 7.850 20.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

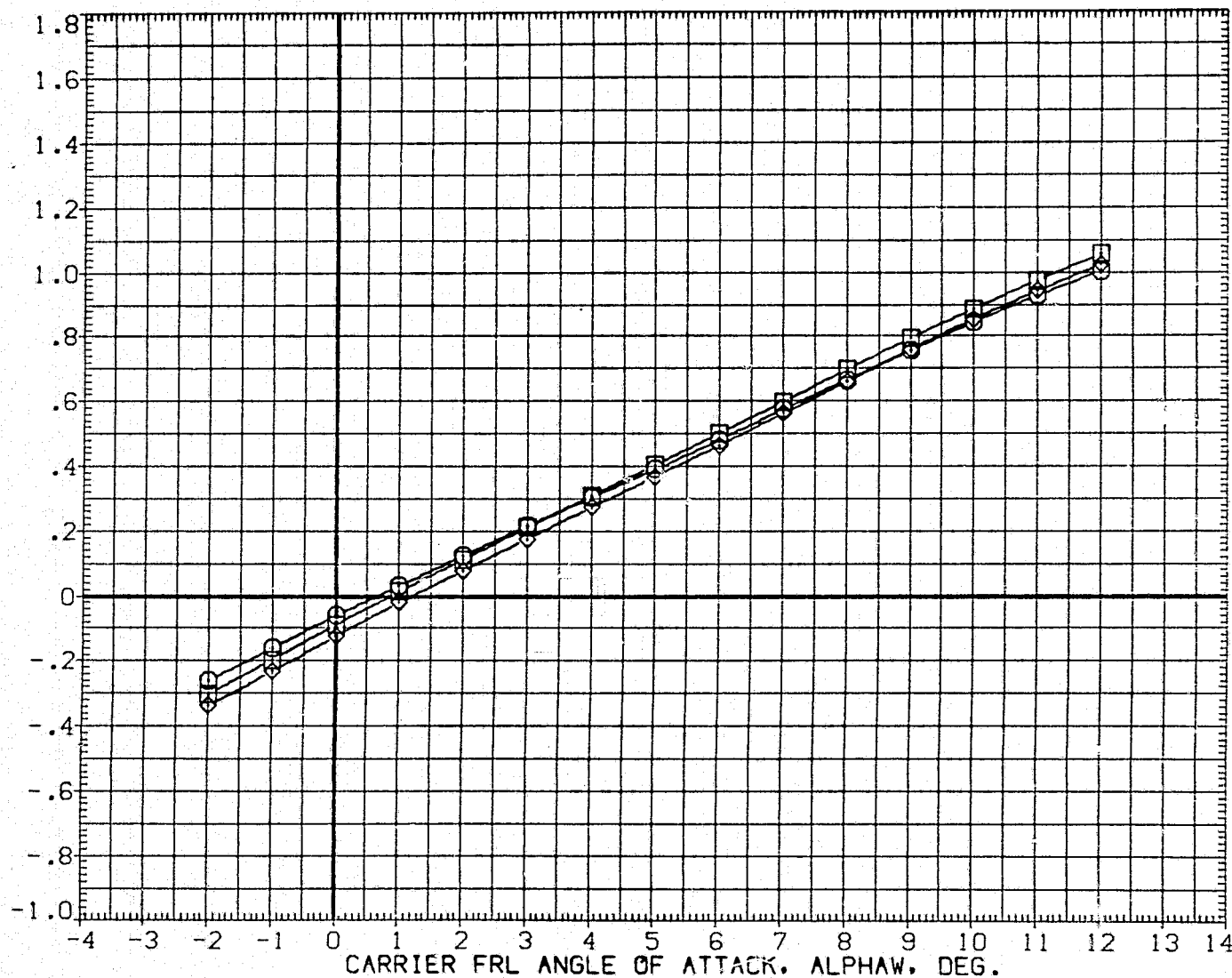


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	10R3	S5-6	REFERENCE INFORMATION	
(RGM099)	CAS KI FO V9.1 (PLUS. ORB NOZ AT38.2A)		7.850	20.000	SREF	5500.0000 SQ.FT.
(RGM092)	CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	7.850	20.000	LRCF	327.8000 IN.
(RGM091)	CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	-2.000	7.850	20.000	BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

LIFT COEFFICIENT, CL

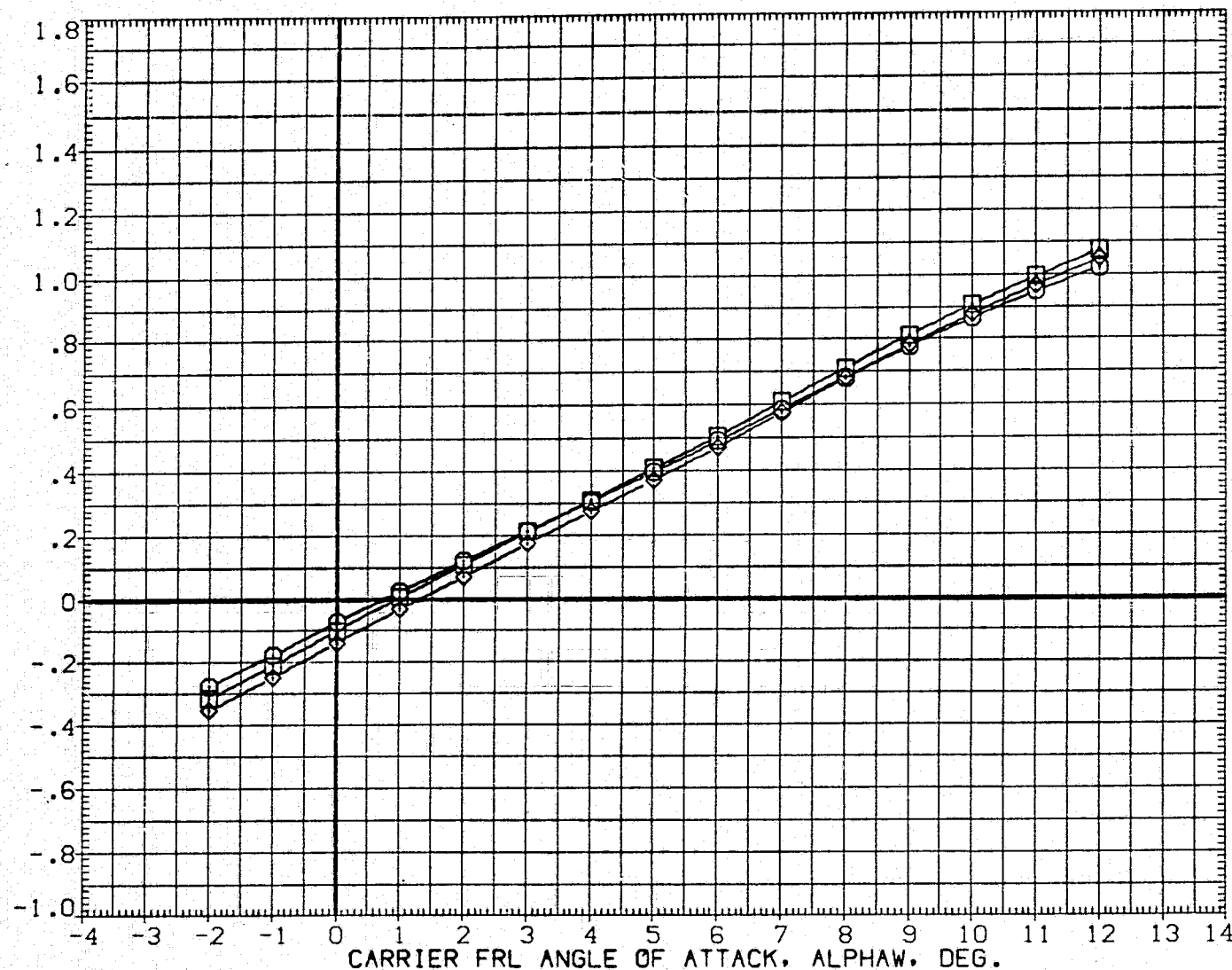


FIG. 241 747+0RB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(C)MACH = .60

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM099)	CAS K1 FO V9.1 (PLUS. ORB NOZ AT38.2A)
(RGM092)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)
(RGM091)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)

STAB	ICRB	S5-6
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

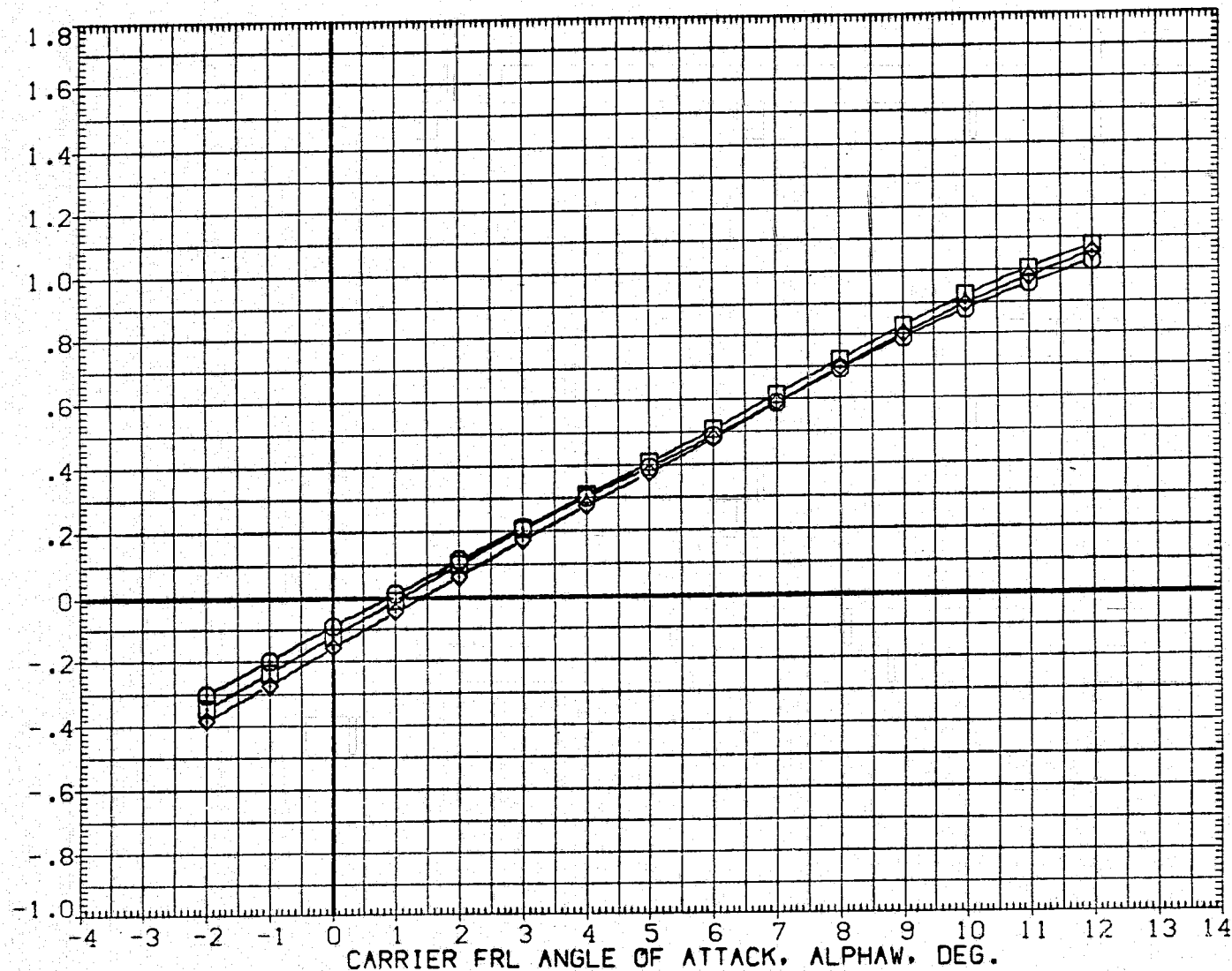


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF  
 (D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION		
(RGM099)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2A)		7.850	20.000	SREF	5500.0000	SQ.FT.
(RGM092)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	7.850	20.000	LREF	327.8000	IN.
(RGM091)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	-2.000	7.850	20.000	BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

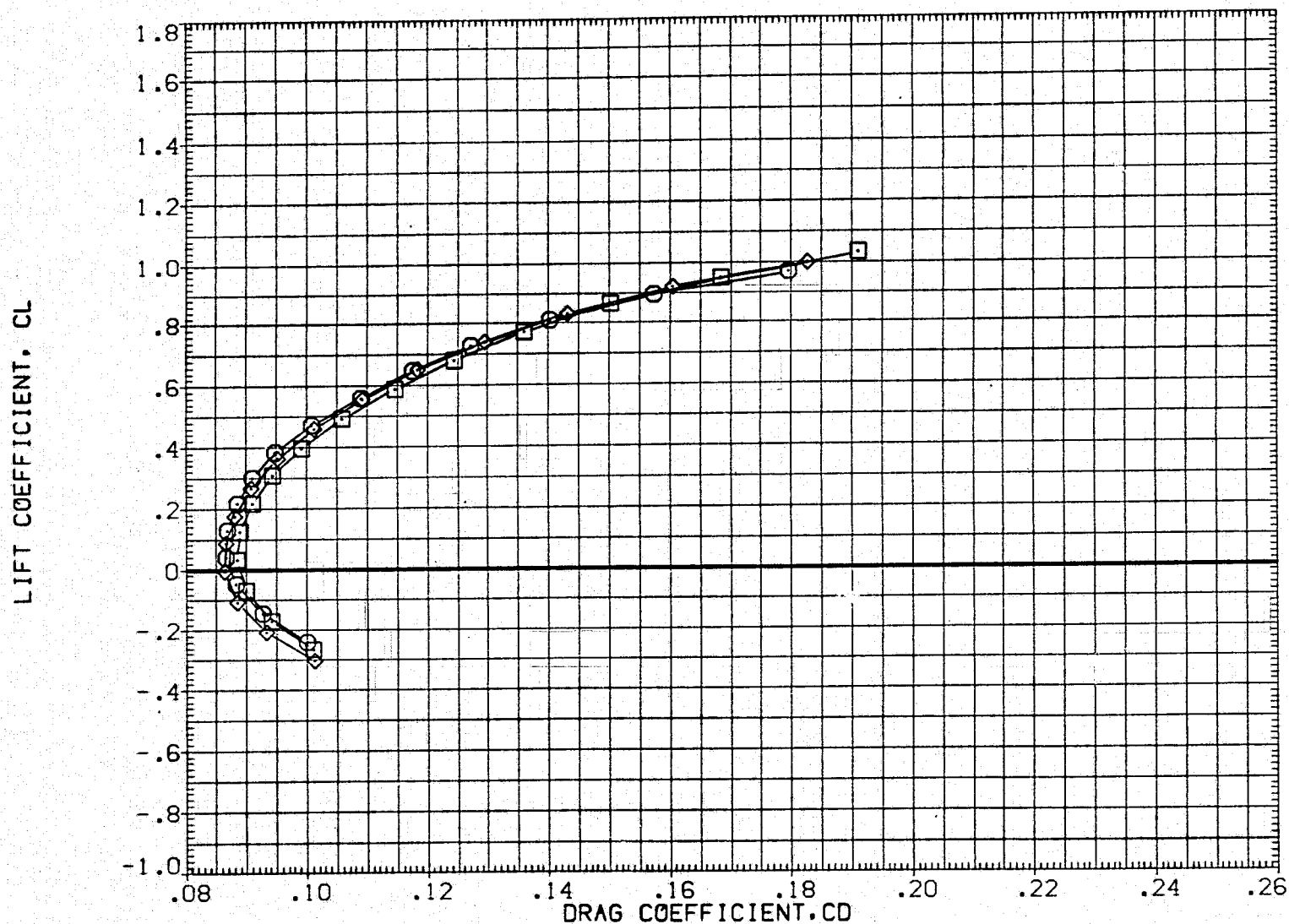


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMO99)	CAS K1 FO V9.1 (PLUS. ORB NOZ AT38.2A)
(RGMO92)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )
(RGMO91)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB	IORB	S5-6
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

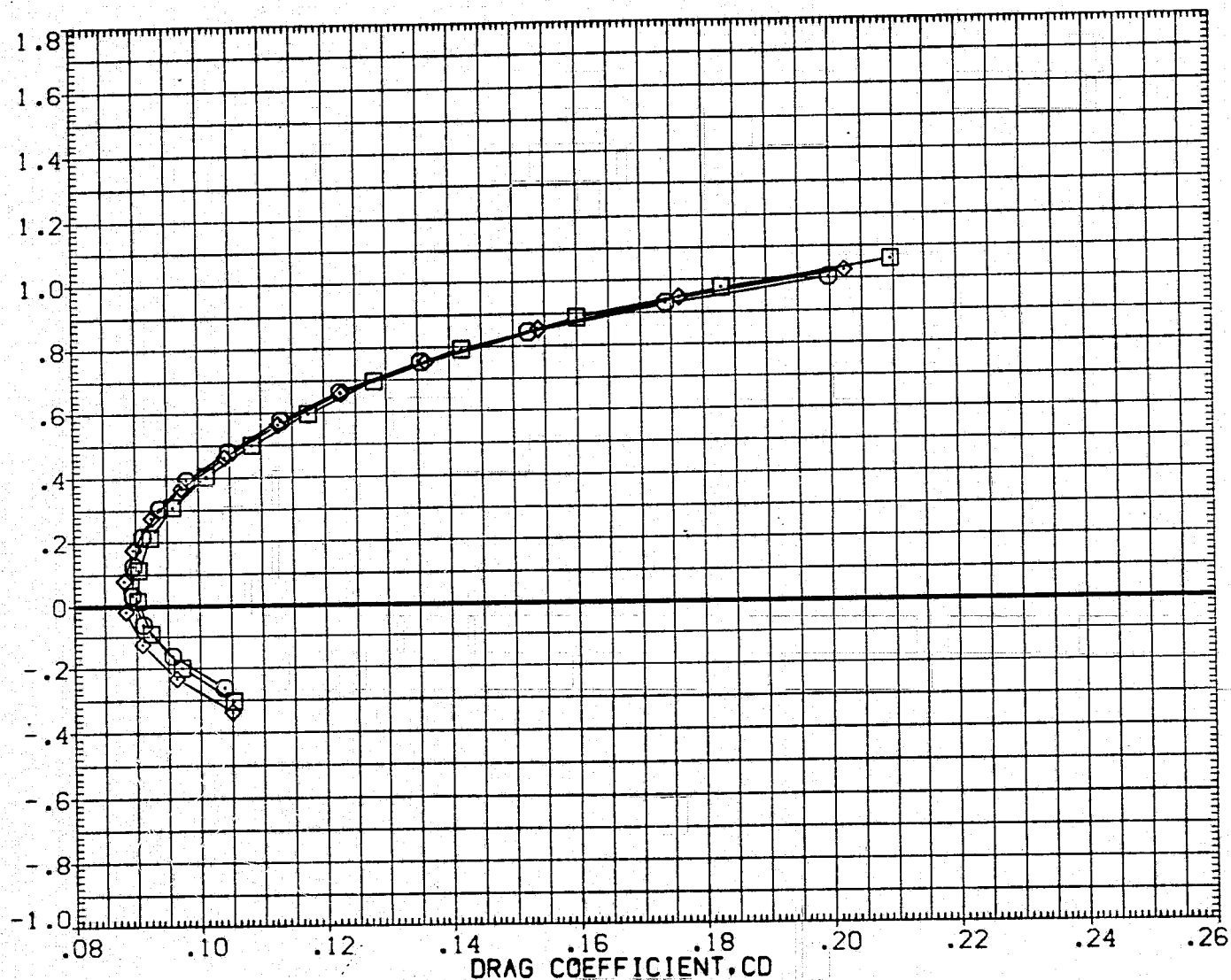


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION		
(RGM089)	CAS K1 FO V9.1 (PLUS. ORB NOZ AT38.2A)	1.000	7.850	20.000	SREF	5500.0000	SQ.FT.
(RGM092)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	-2.000	7.850	20.000	LREF	327.8000	IN.
(RGM091)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)		7.850	20.000	BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

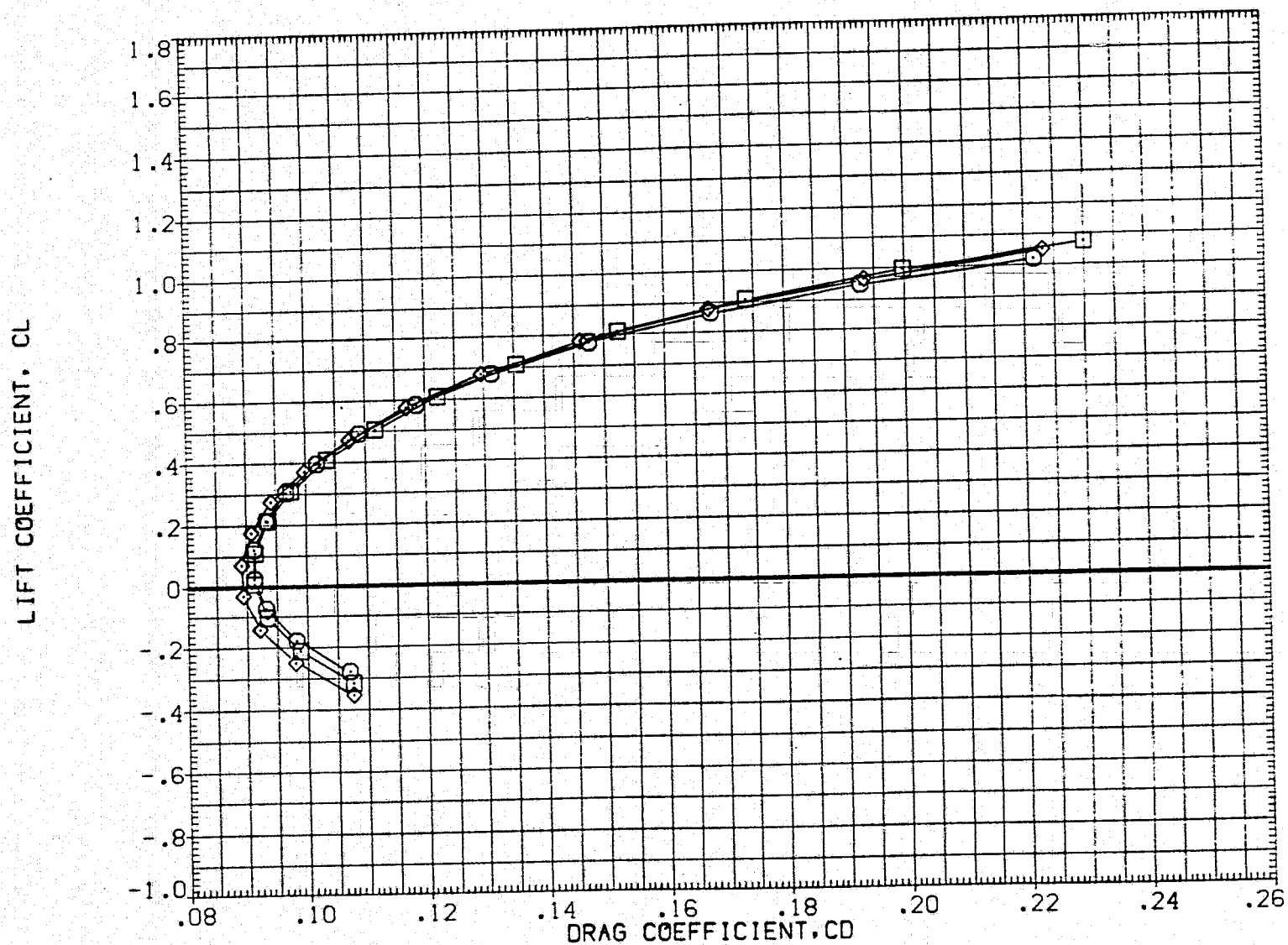


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF  
(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM099)	○ CAS K1 FO V9.1 (PLUS. ORB NOZ AT38.2A)		7.850	20.000
(RGM092)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	1.000	7.850	20.000
(RGM091)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
YMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

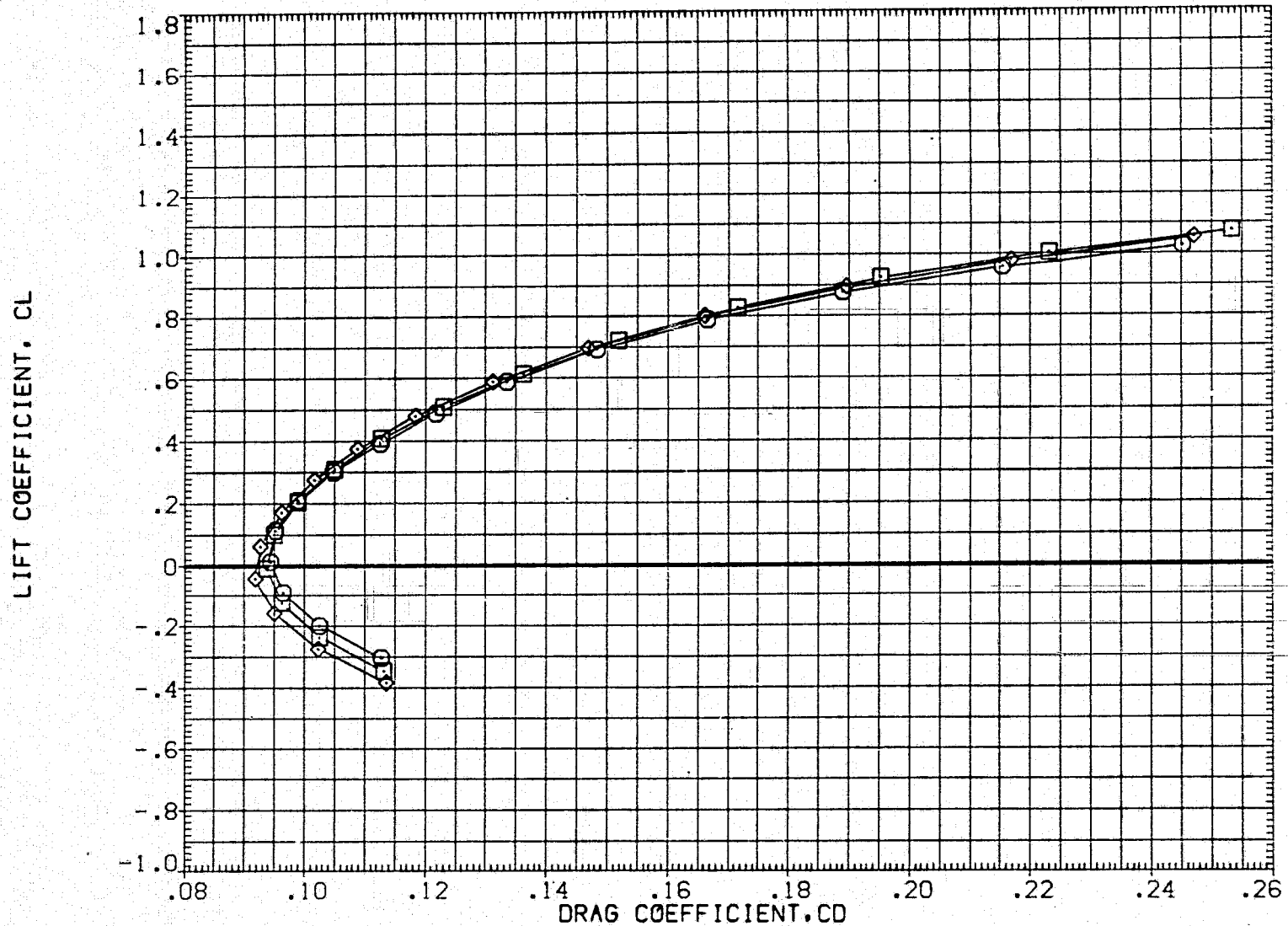


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM099)	CAS KI FO V9.1 (PLUS. ORB NOZ AT38.2A)
(RGM092)	CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)
(RGM091)	CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)

STAB	IORB	SS-6
7.850	20.000	
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SO. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

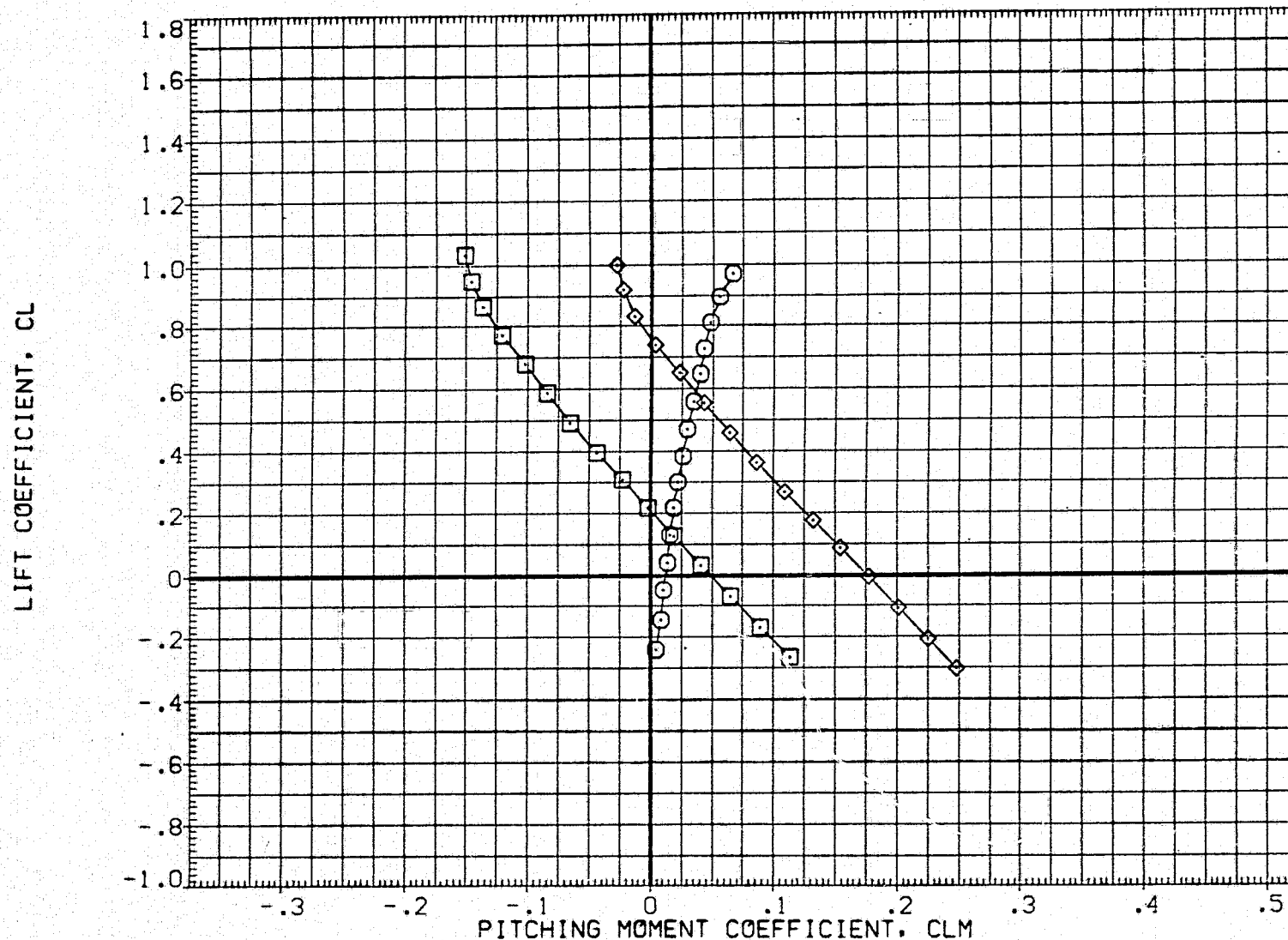


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(A)MACH = .30

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM099)	CAS K1 FD V9.1 (PLUS. ORB NOZ AT38.2A)
(RGM092)	CAS K1 FD H15.6 V9.1 (PLUS. ORB NOZ AT38.2)
(RGM091)	CAS K1 FD H15.6 V9.1 (PLUS. ORB NOZ AT38.2)

STAB	IORB	S5-6
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

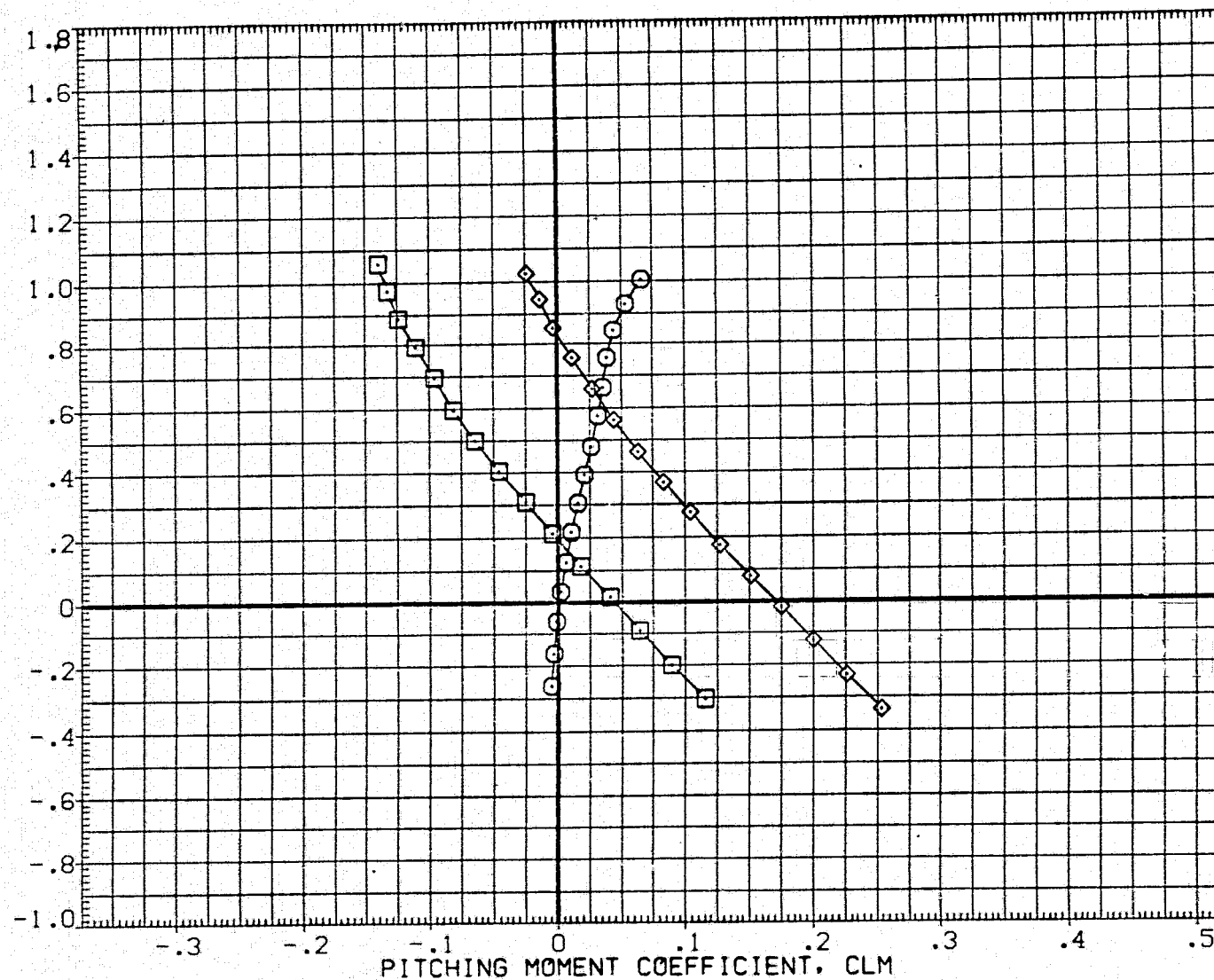


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF  
 (B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION	
(RGM099)	CAS K1 FO V9.1 (PLUS. ORB NOZ AT38.2A)		7.850	20.000	SREF	5500.0000 SQ.FT.
(RGM092)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	1.000	7.850	20.000	LREF	327.8000 IN.
(RGM091)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	-2.000	7.850	20.000	BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

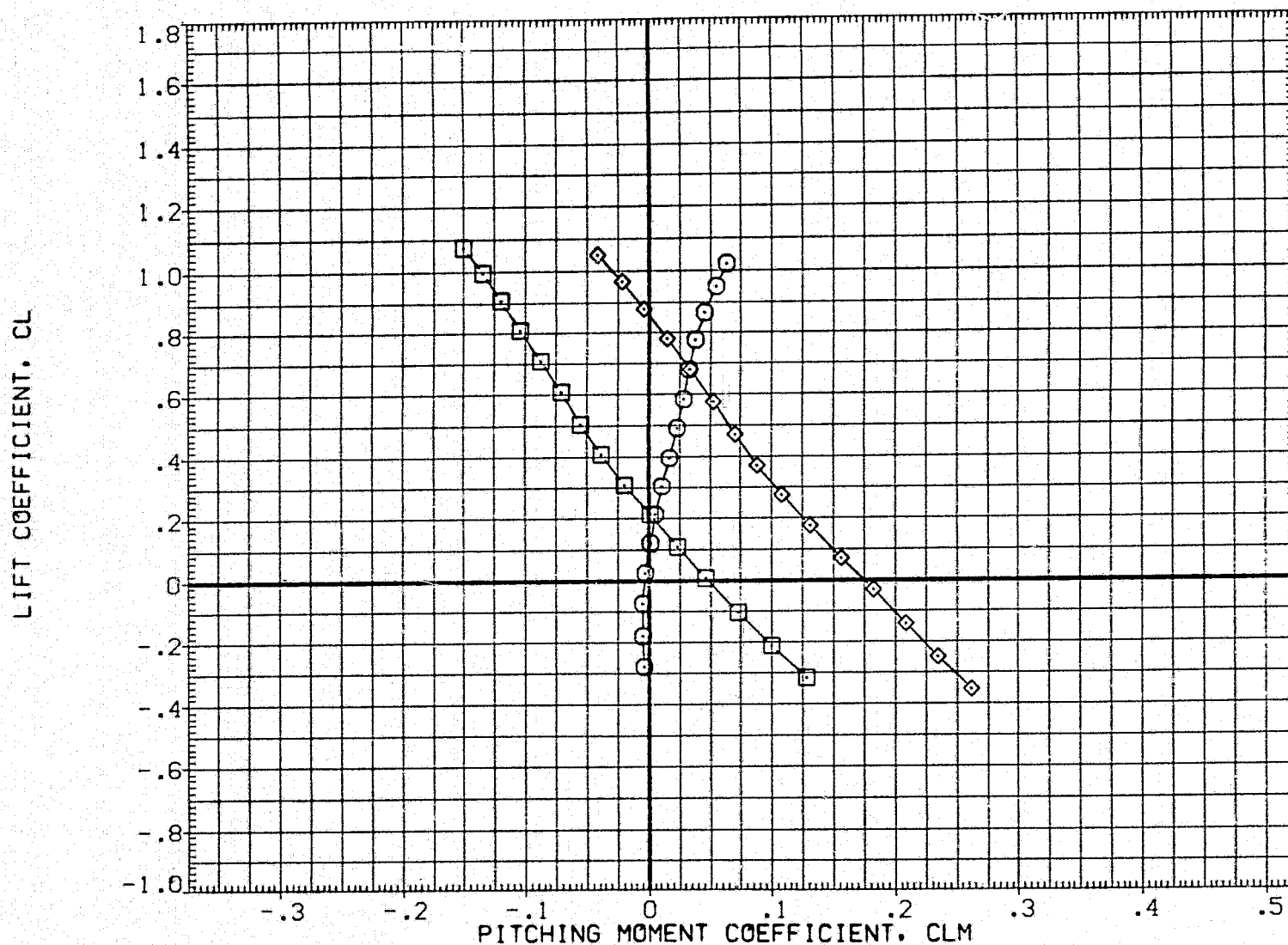


FIG. 241 747+ORB(8 DEG). STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM099)	CA5 K1 FO V9.1 (PLUS. ORB NOZ AT38.2A)
(RGM092)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)
(RGM091)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)

STAB	IORB	S5-6
	7.850	20.000
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

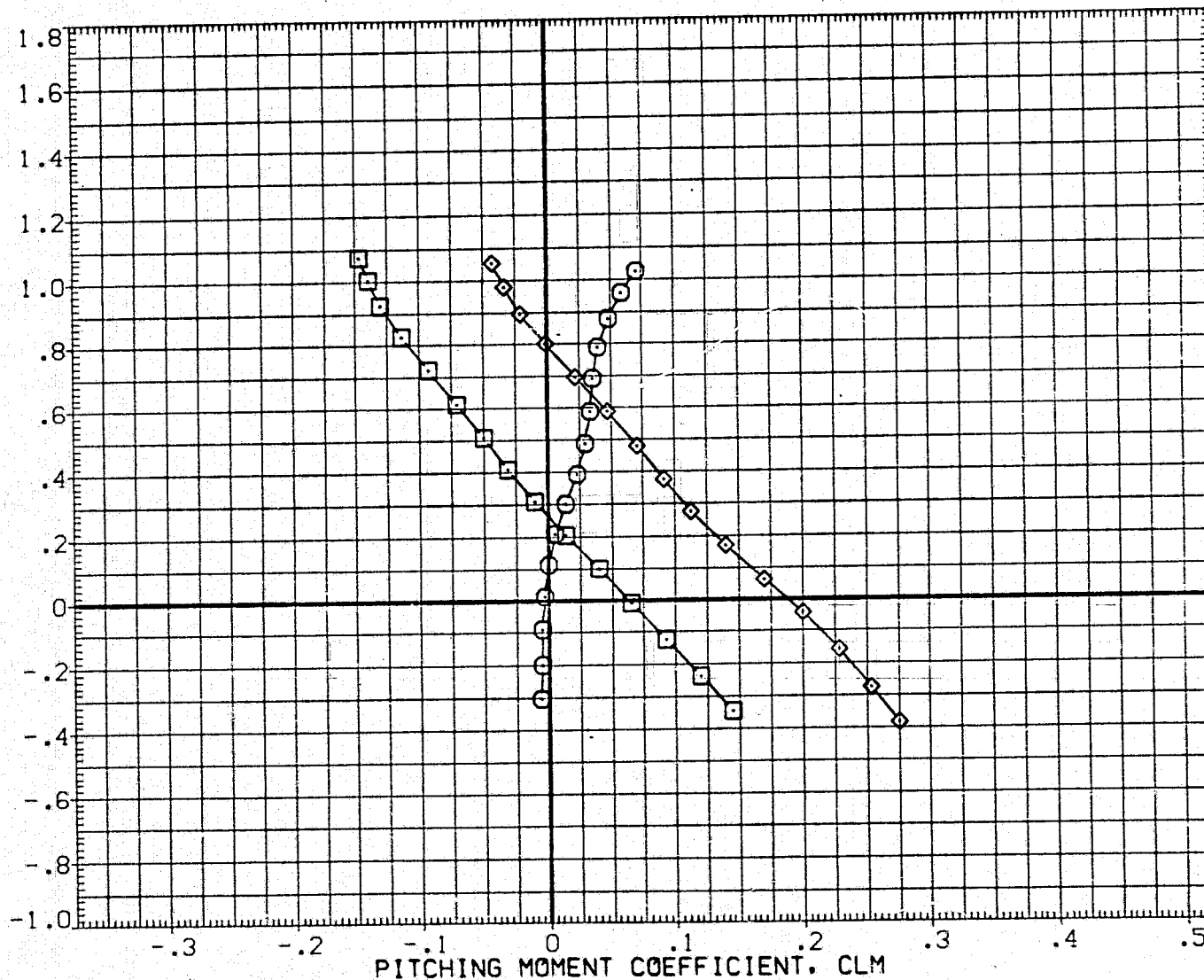


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM099)	CA5 KI FO V9.1 (PLUS. ORB NOZ AT38.2A)
(RGM092)	CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)
(RGM091)	CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)

STAB	IORB	S5-6
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	50. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

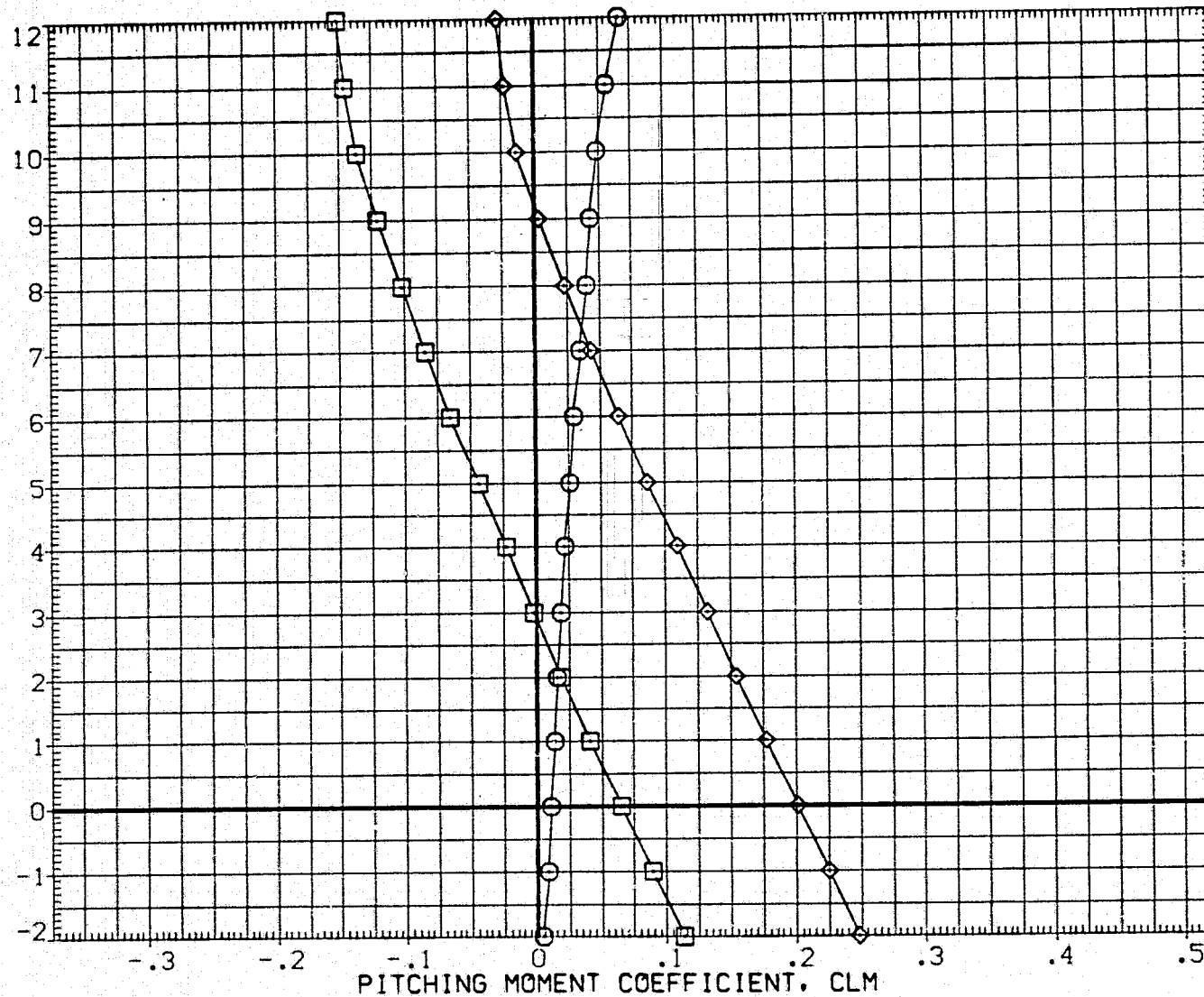


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION		
(RGM099)	□ CAS K1 FO V9.1 (PLUS. ORB NOZ AT38.2A)		7.850	20.000	SREF	5500.0000	SQ.FT.
(RGM092)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	7.850	20.000	LREF	327.8000	IN.
(RSM091)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	-2.000	7.850	20.000	BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

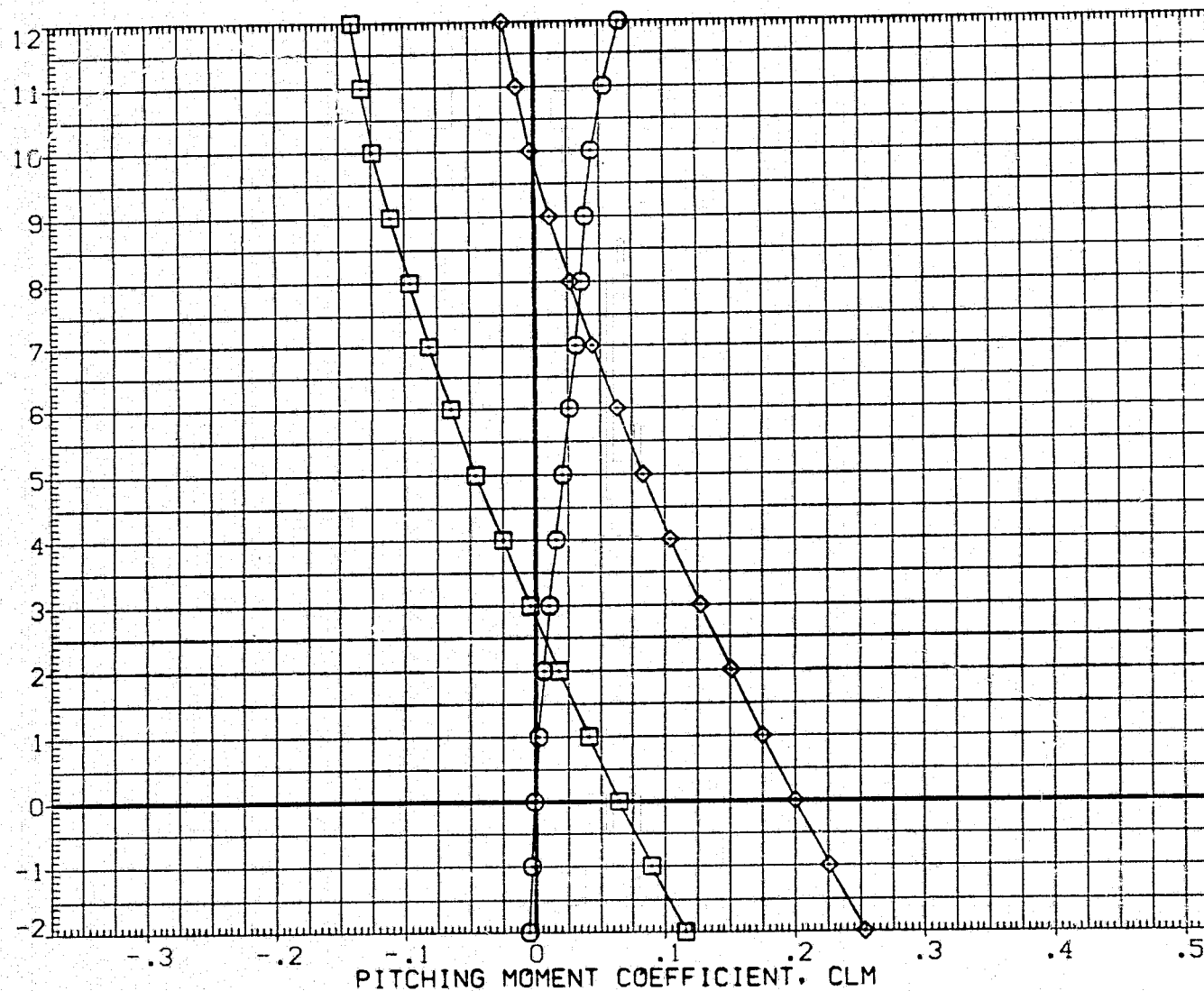


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION	
(RGM099)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2A)	1.000	7.850	20.000	SREF	5500.0000 SQ.FT.
(RGM092)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	-2.000	7.850	20.000	LREF	227.8000 IN.
(RGM091)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)				BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

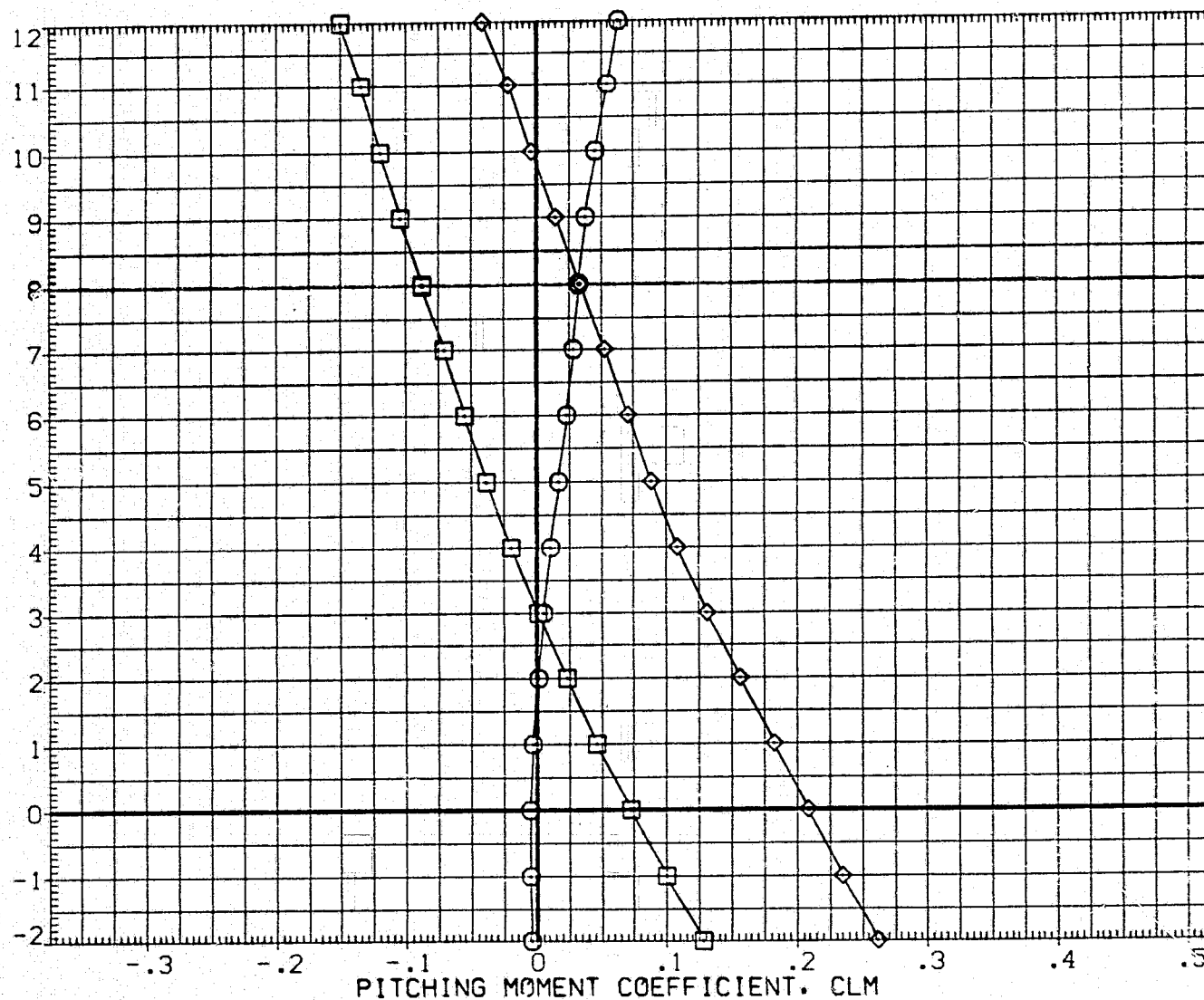


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM099)	CA5 K1 FO V9.1 (PLUS. ORB NOZ AT38.2A)
(RGM092)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)
(RGM091)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)

STAB	IORB	S5-6
1.000	7.850	20.000
-2.000	7.850	20.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK. ALPHA. DEG.

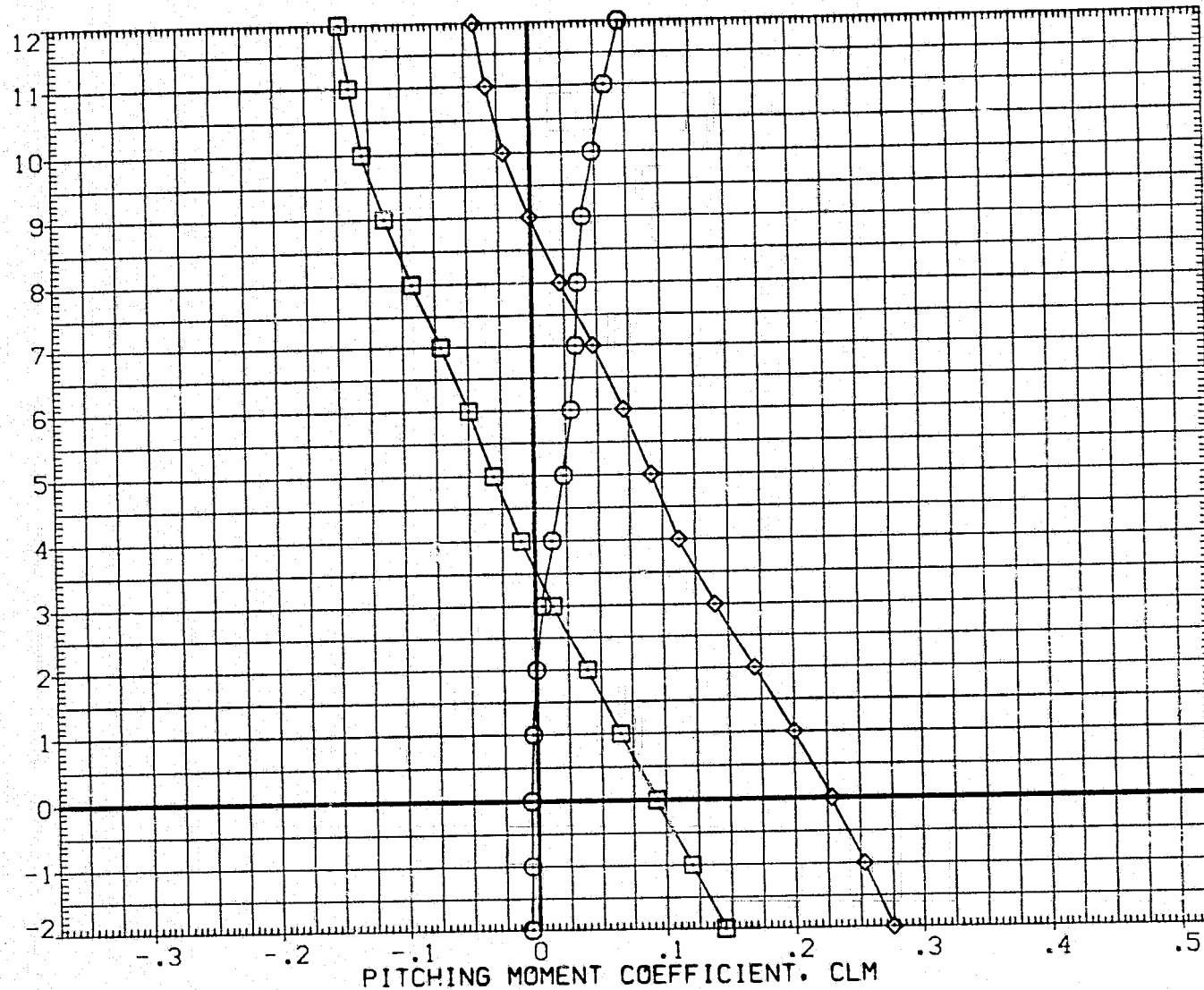


FIG. 241 747+ORB(8 DEG), STABILIZER EFFECT, FLAPS UP LAUNCH, TAIL CONE OFF

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION	
(RGM107)	CAS KI FO V9.1 (PLUS. ORB TC5 AT38.3 )		4.000	.000	SREF	5500.0000 SQ.FT.
(RGM125)	CAS KI FO HIS.1A V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	4.000	.000	LREF	327.8000 IN.
(RGM108)	CAS KI FO HIS.1A V9.1 (PLUS. ORB TC5 AT38.3 )	-3.200	4.000	.000	BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

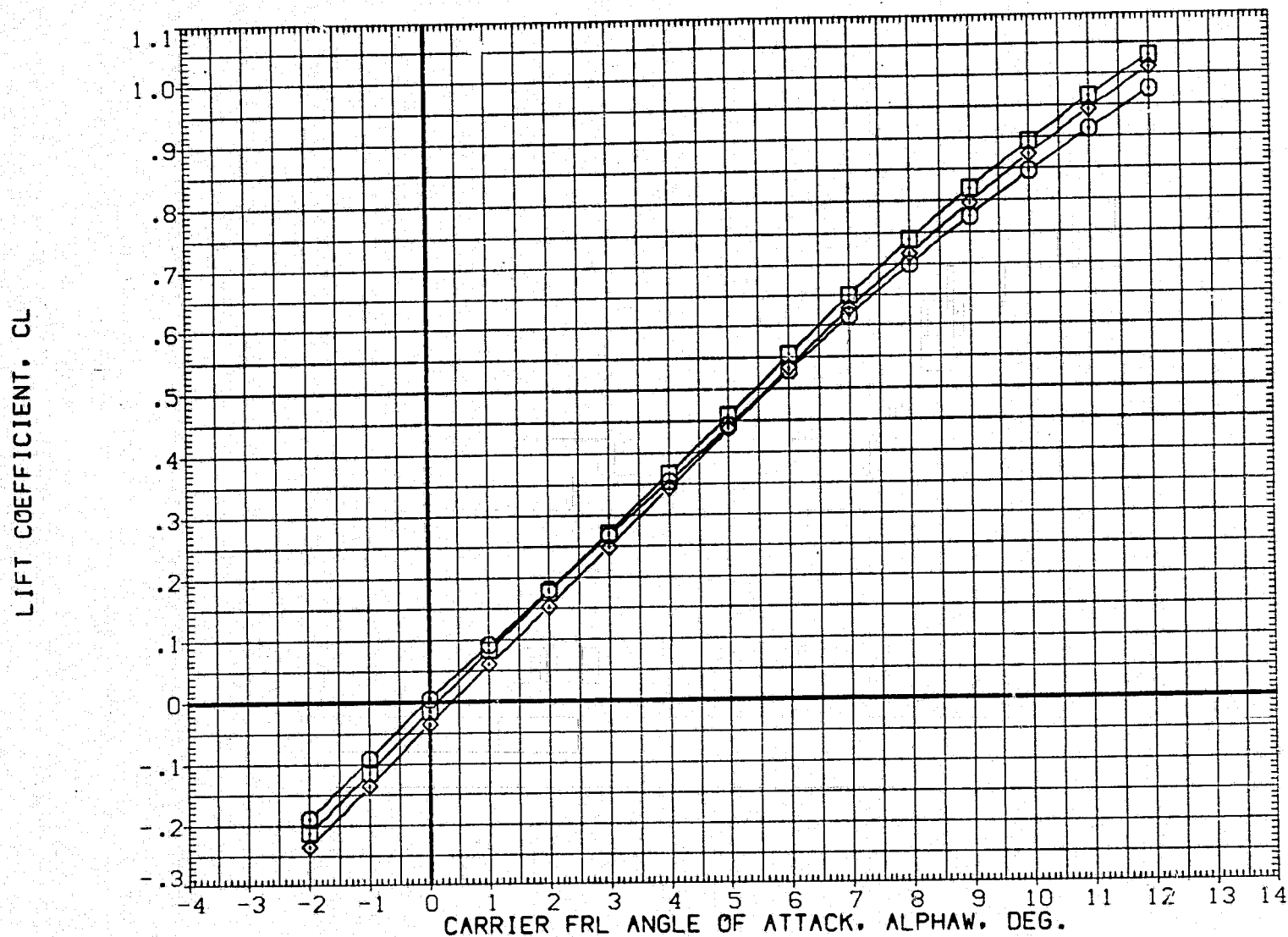


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(A)MACH = .30



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM107)	○	CAS	K1	FO	V9.1	(PLUS. ORB TC5 AT38.3 )
(RGM125)	□	CAS	K1	FO	H15.1A	V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM108)	◇	CAS	K1	FO	H15.1A	V9.1 (PLUS. ORB TC5 AT38.3 )

STAB	IORB	S5-6
	4.000	.000
-2.000	4.000	.000
-3.200	4.000	.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

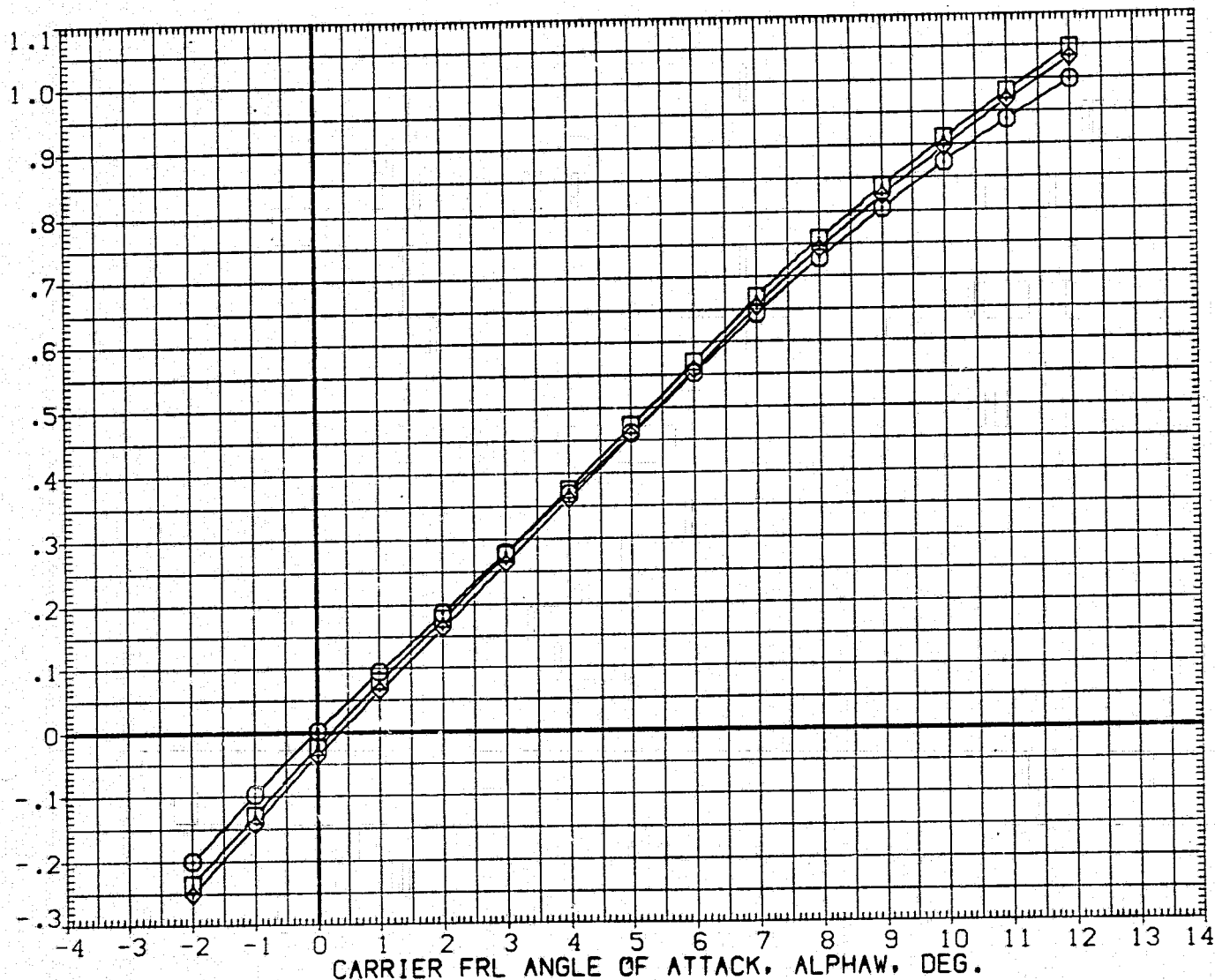


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM107) □ CA5 K1 FO V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM125) ◇ CA5 K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM108) ◇ CA5 K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )

STAB

IORB

SS-6

-2.000

4.000

.000

-3.200

4.000

.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

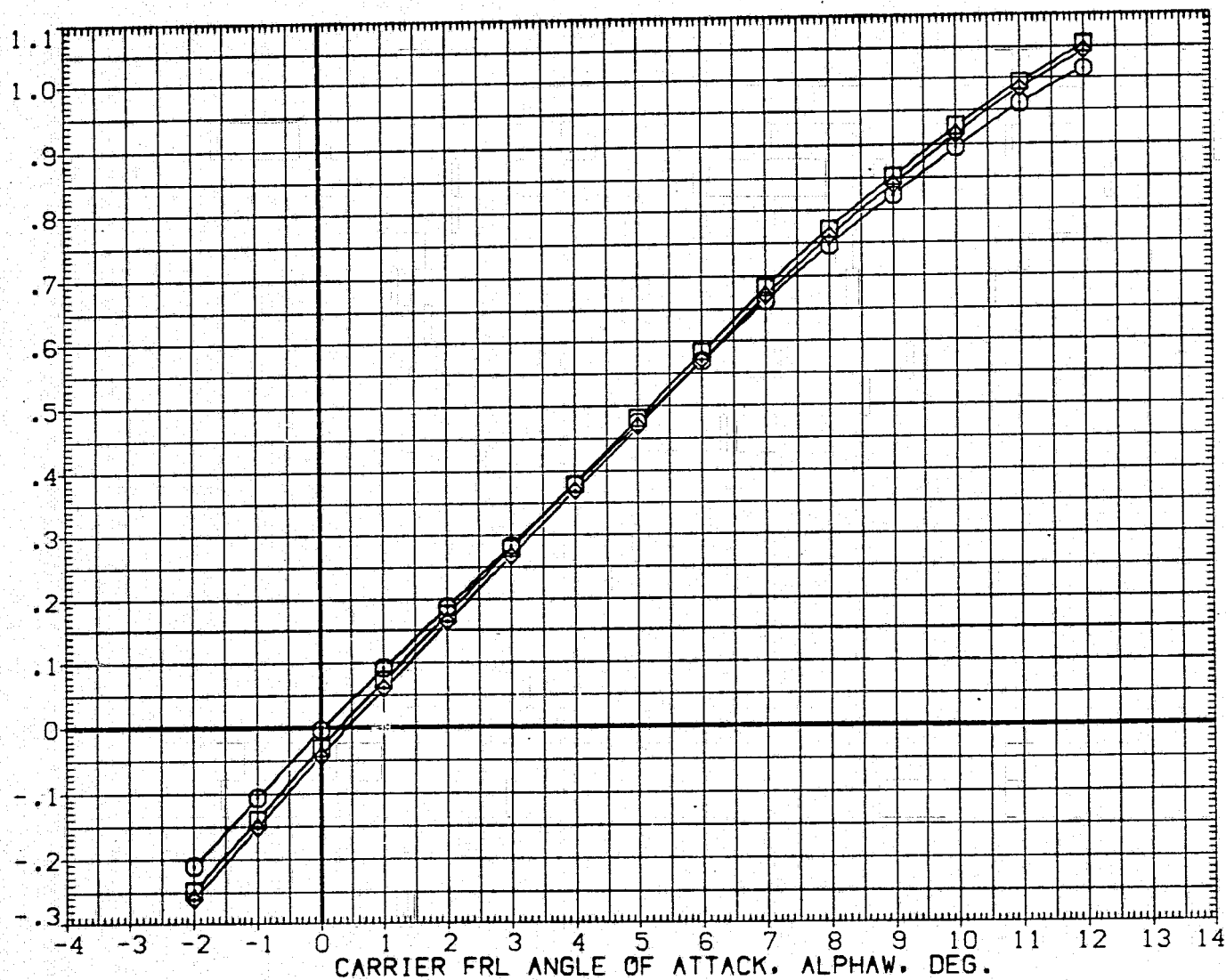


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6
(RGM107)	CA5 K1 FO V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	4.000	.000
(RGM125)	CA5 K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3)	-3.200	4.000	.000
(RGM108)	CA5 K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3)	-3.200	4.000	.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

LIFT COEFFICIENT, CL

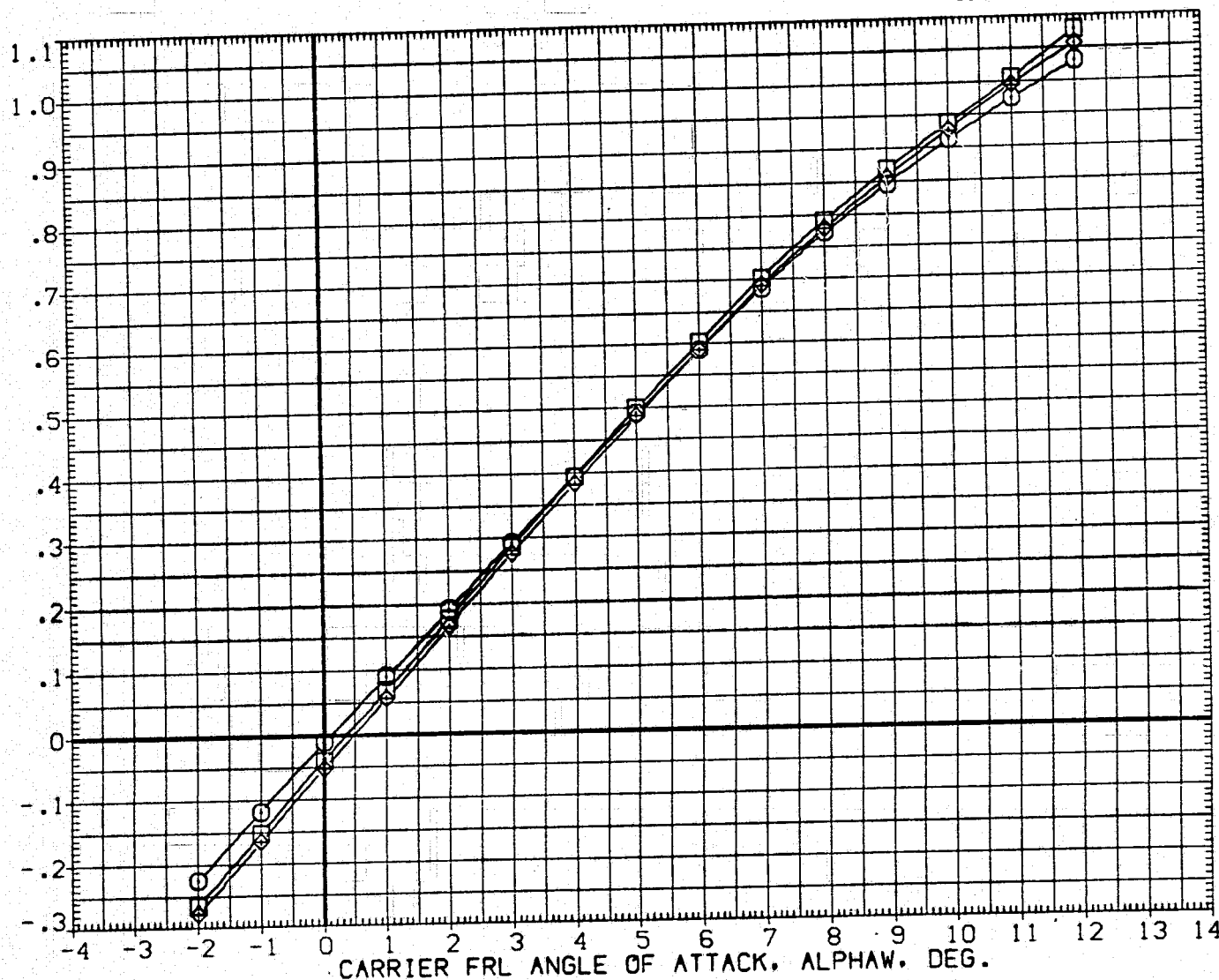


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM107)  $\square$  CA5 K1 FO V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM125)  $\square$  CA5 K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM108)  $\diamond$  CA5 K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )

STAB

IORB

SS-6

-2.000 4.000 .000  
 -3.200 4.000 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

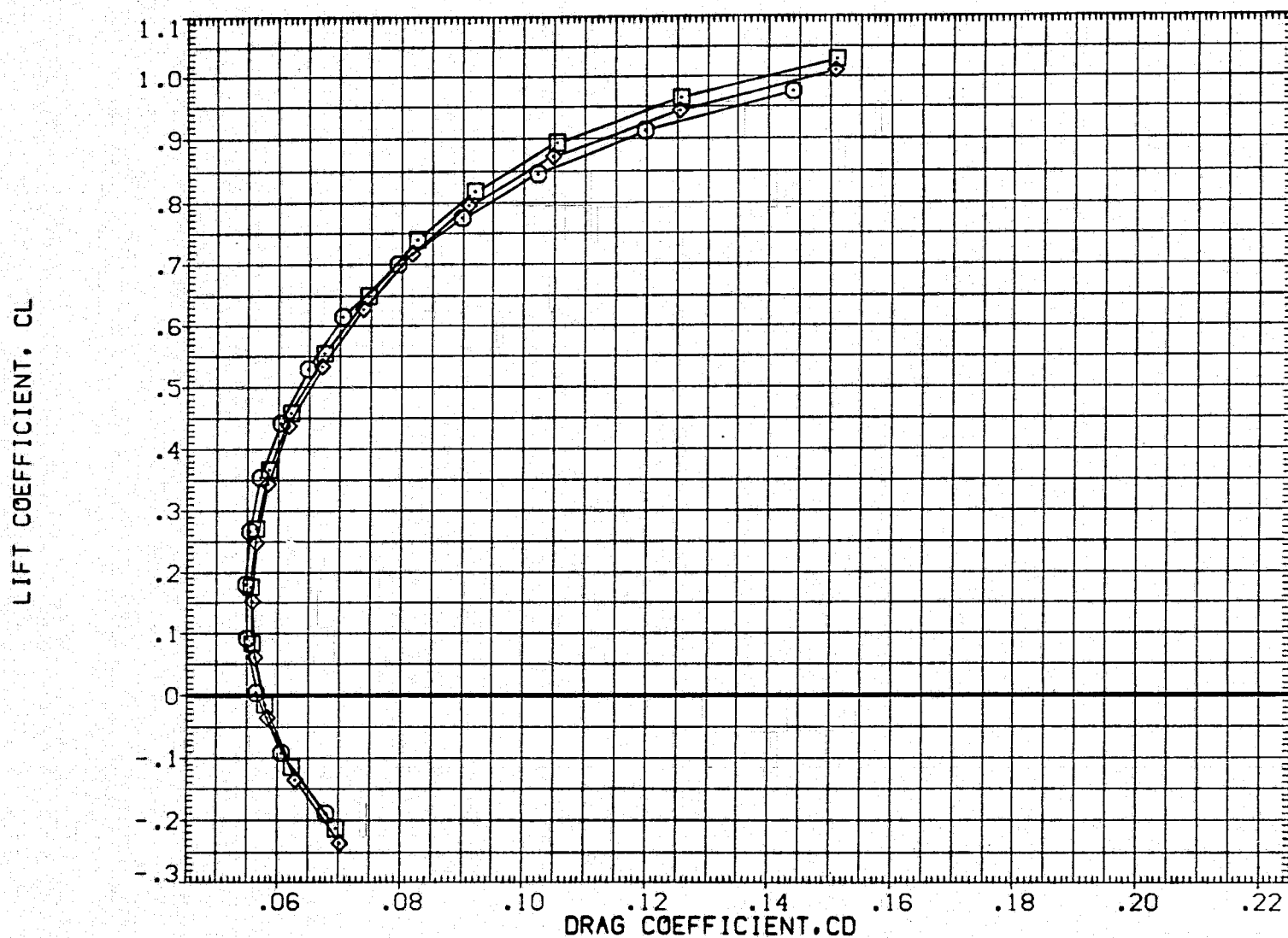


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION		
(RGM107)	CAS K1 FO V9.1 (PLUS. ORB TCS AT38.3 )		4.000	.000	SREF	5500.0000	SQ.FT.
(RGM125)	CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	4.000	.000	LREF	327.8000	IN.
(RGM108)	CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )	-3.200	4.000	.000	BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

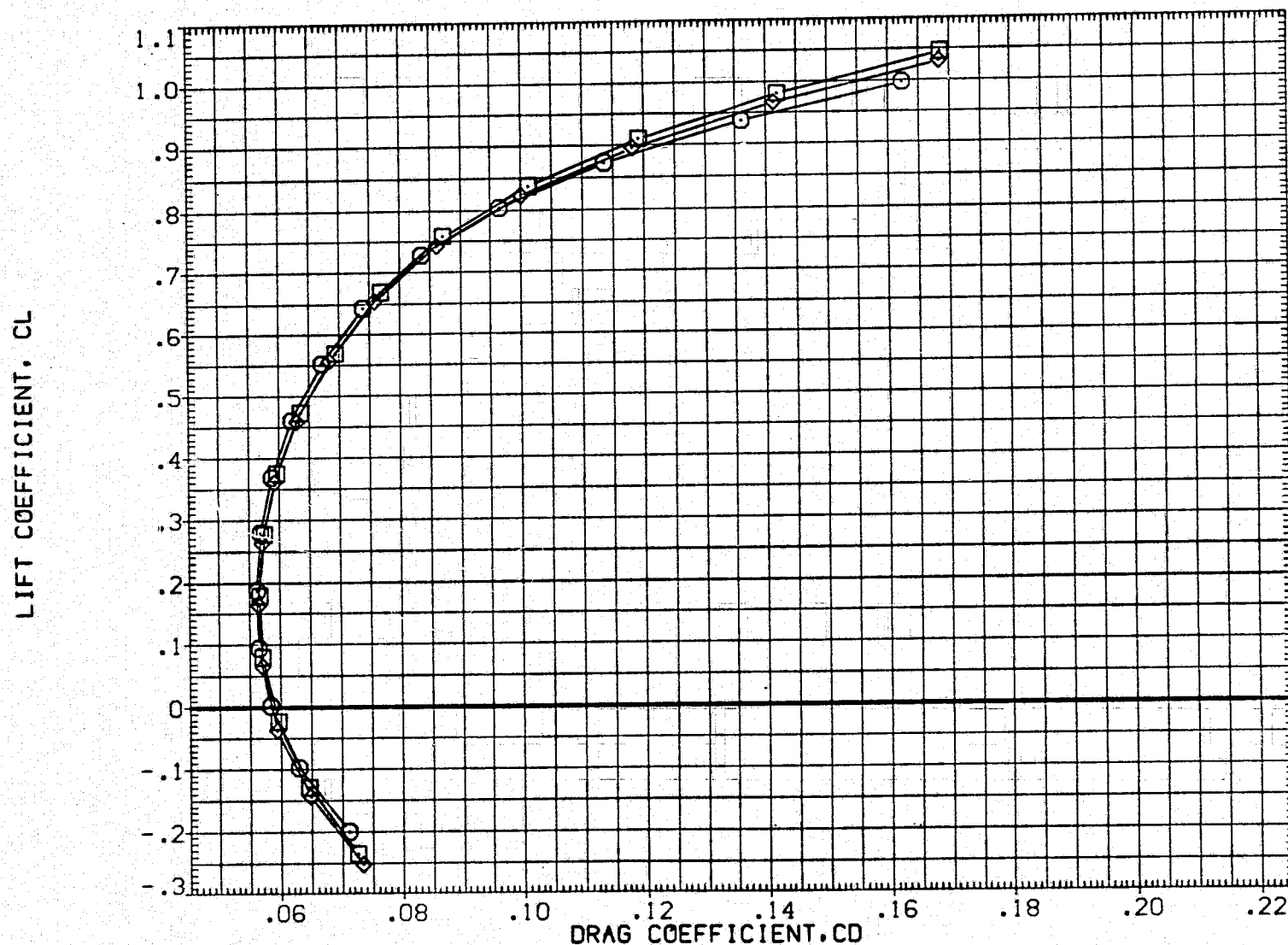


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY  
(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM107)	CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM125)	CAS K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM108)	CAS K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )

STAB	IORB	S5-6
-2.000	4.000	.000
-3.200	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

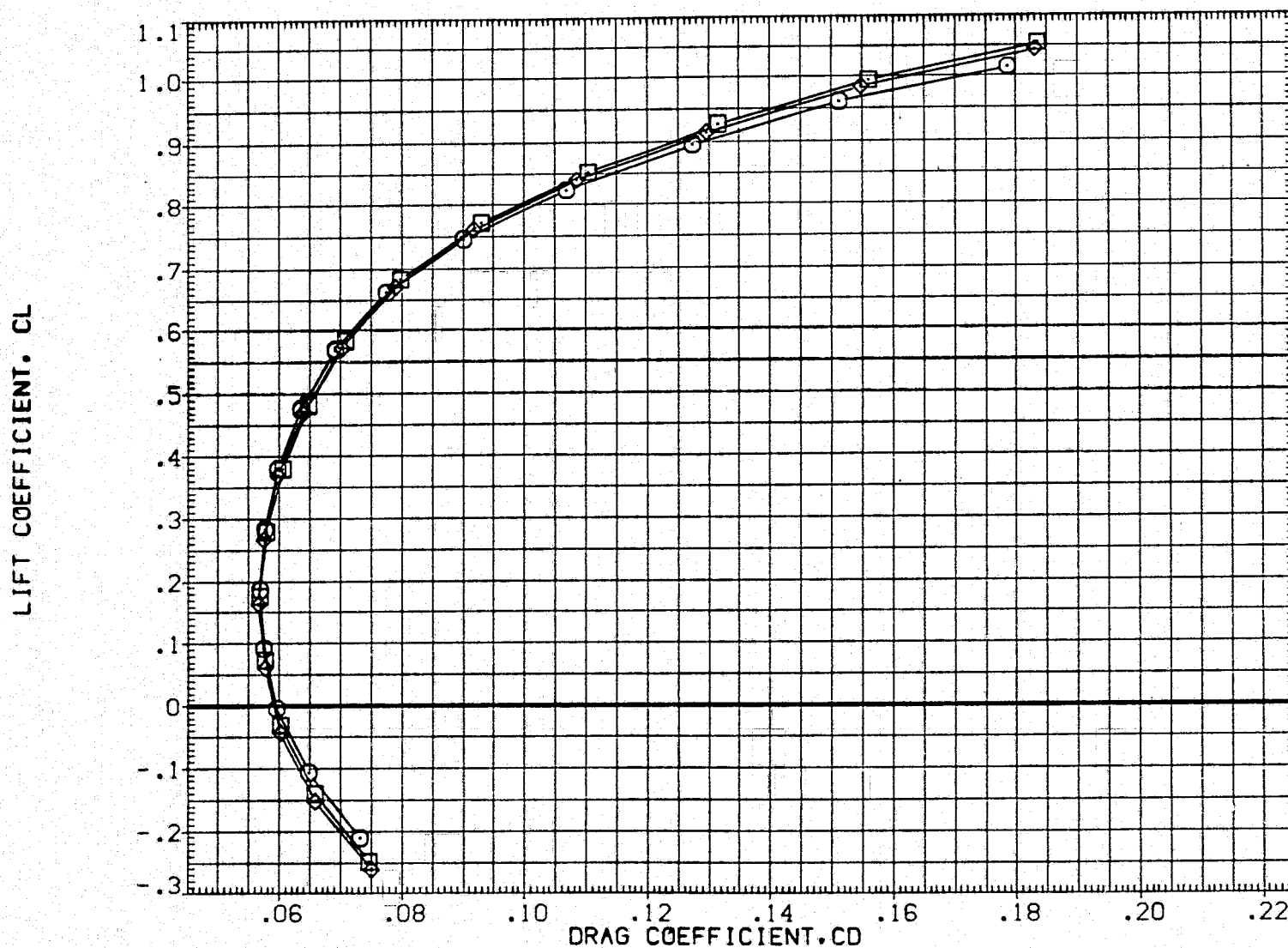


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM107)	CAS K1 FO V9.1 (PLUS. ORB TCS AT38.3)
(RGM125)	CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3)
(RGM108)	CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3)

STAB	IORB	SS-6
-2.000	4.000	.000
-3.200	4.000	.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

LIFT COEFFICIENT, CL

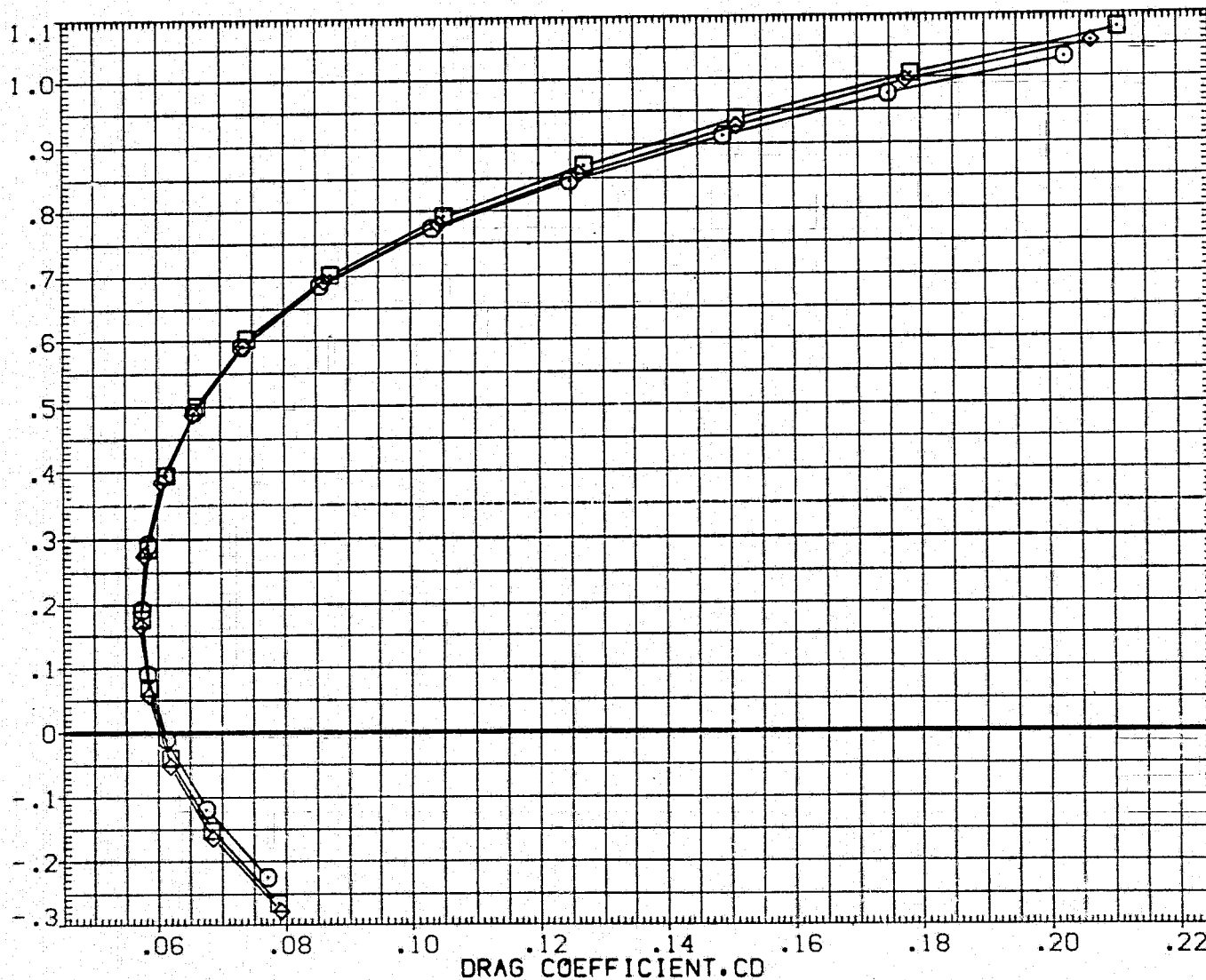


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	SS-6	REFERENCE INFORMATION		
(RSM107)	CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.3 )		4.000	.000	SREF	5500.0000	SQ.FT.
(RSM125)	CAS K1 FO HIS.1A V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	4.000	.000	LREF	327.8000	IN.
(RSM108)	CAS K1 FO HIS.1A V9.1 (PLUS. ORB TC5 AT38.3 )	-3.200	4.000	.000	BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

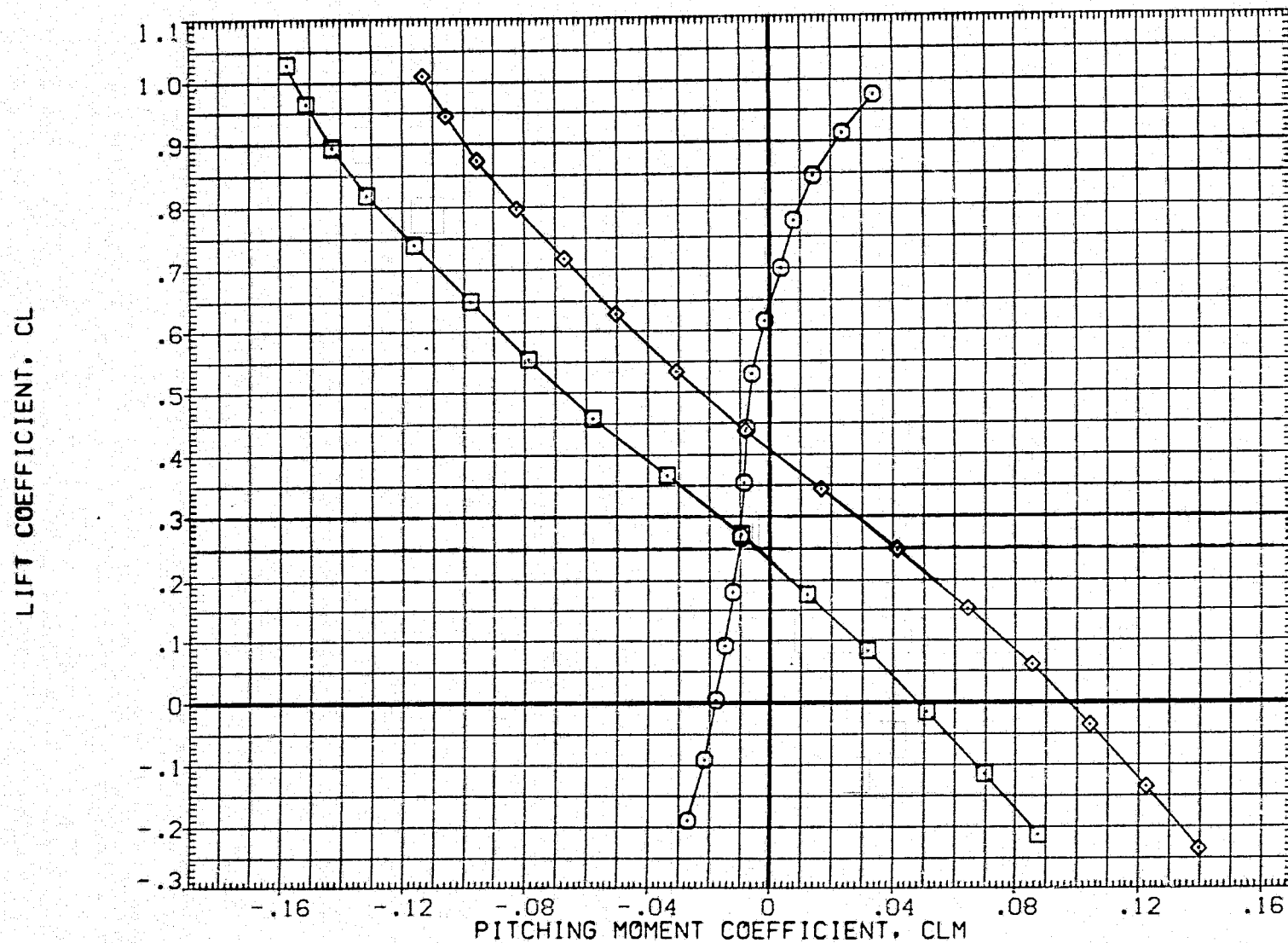


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY  
(A)MACH = .30



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION	
(RGM107)	□ CAS K1 FO V9.1 (PLUS. ORB TCS AT38.3 )		4.000	.000	SREF	5500.0000 SQ.FT.
(RGM125)	○ CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	4.000	.000	LREF	327.8000 IN.
(RGM108)	◇ CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )	-3.200	4.000	.000	BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

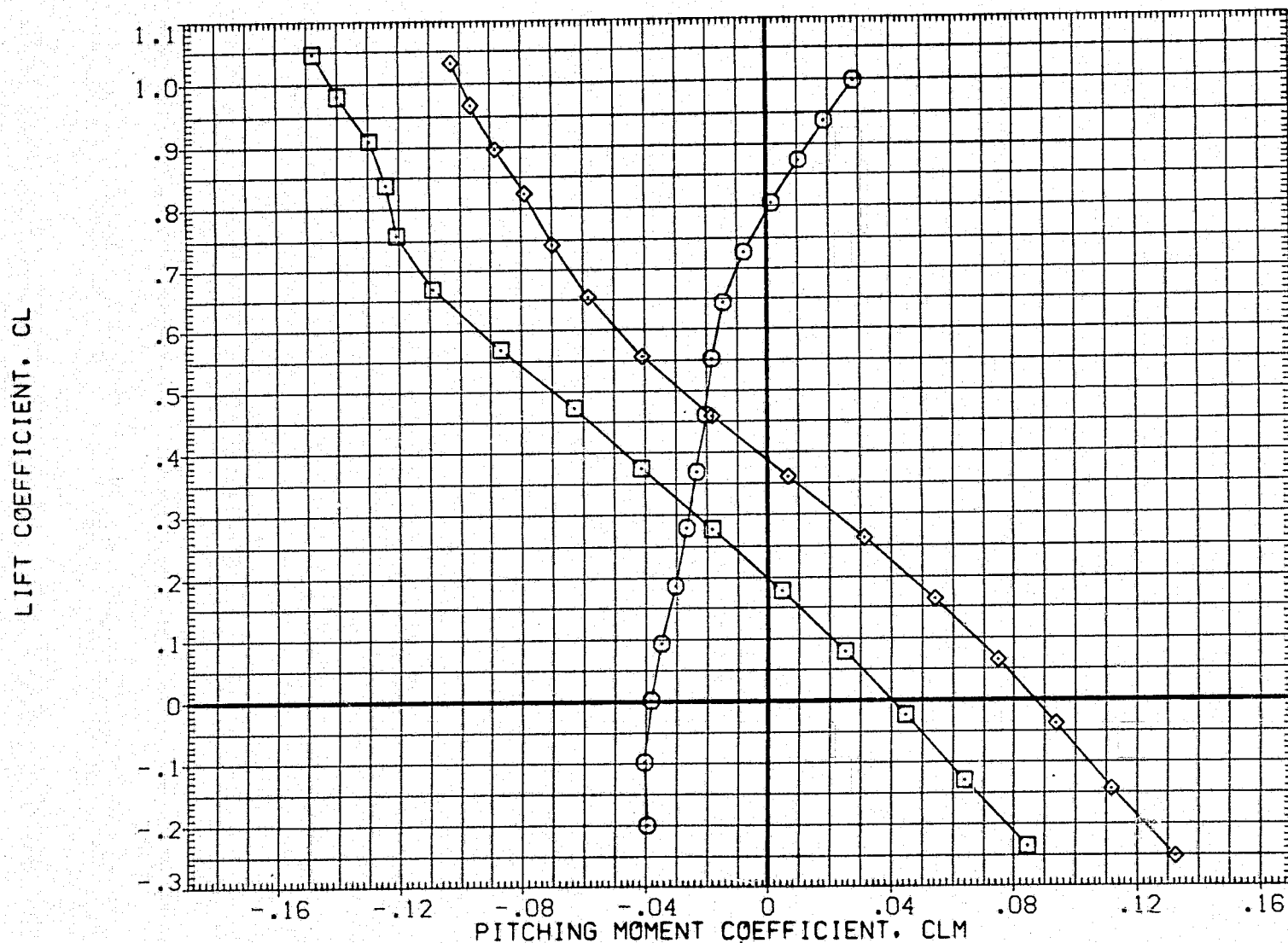


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM107)  $\square$  CAS K1 FD V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM125)  $\square$  CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM108)  $\diamond$  CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )

STAB

IORB

SS-6

-2.000 4.000 .000  
 -3.200 4.000 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

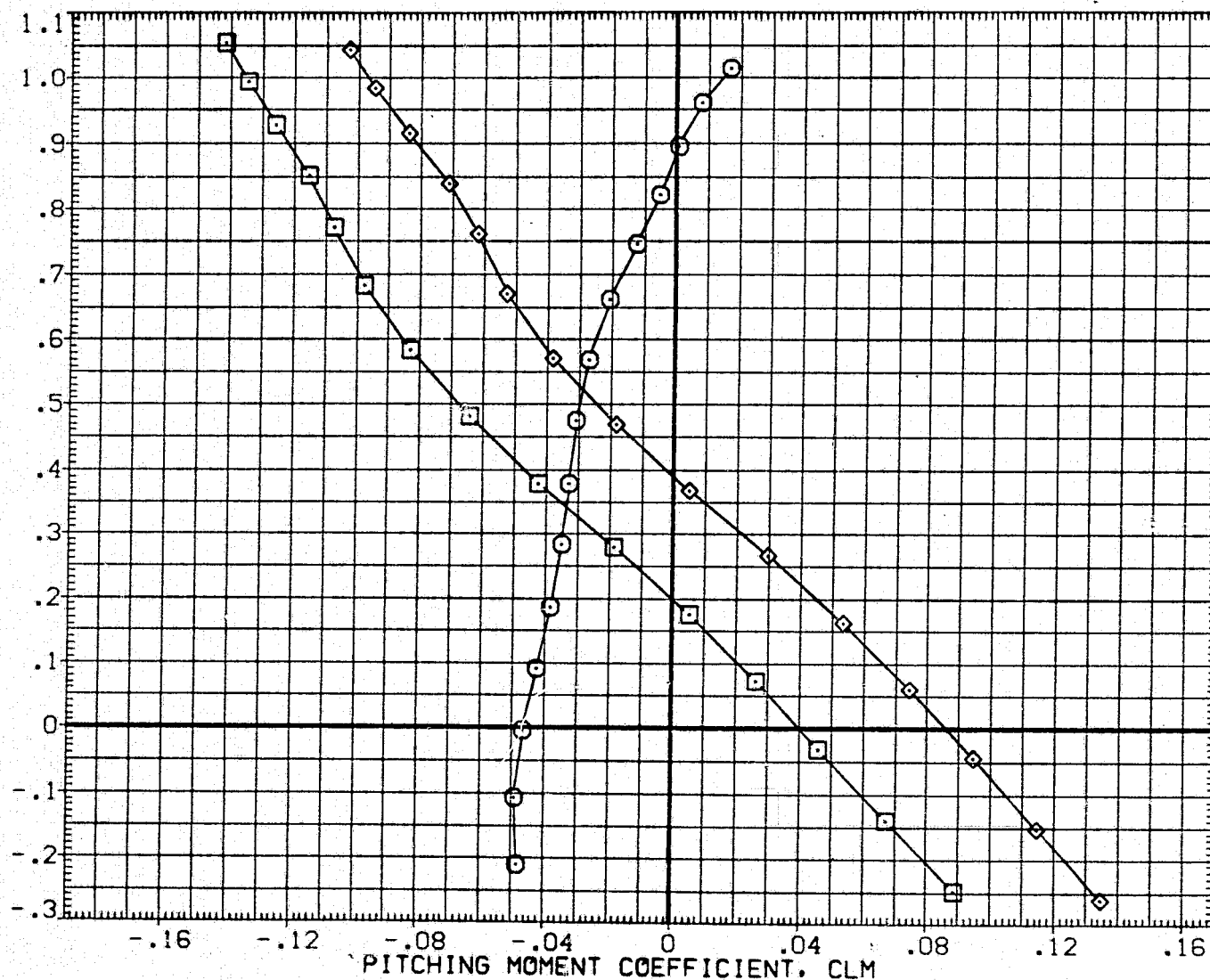


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM107)	○ CAS KI FO V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM125)	□ CAS KI FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM108)	◇ CAS KI FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )

STAB	IORB	S5-6
	4.000	.000
-2.000	4.000	.000
-3.200	4.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

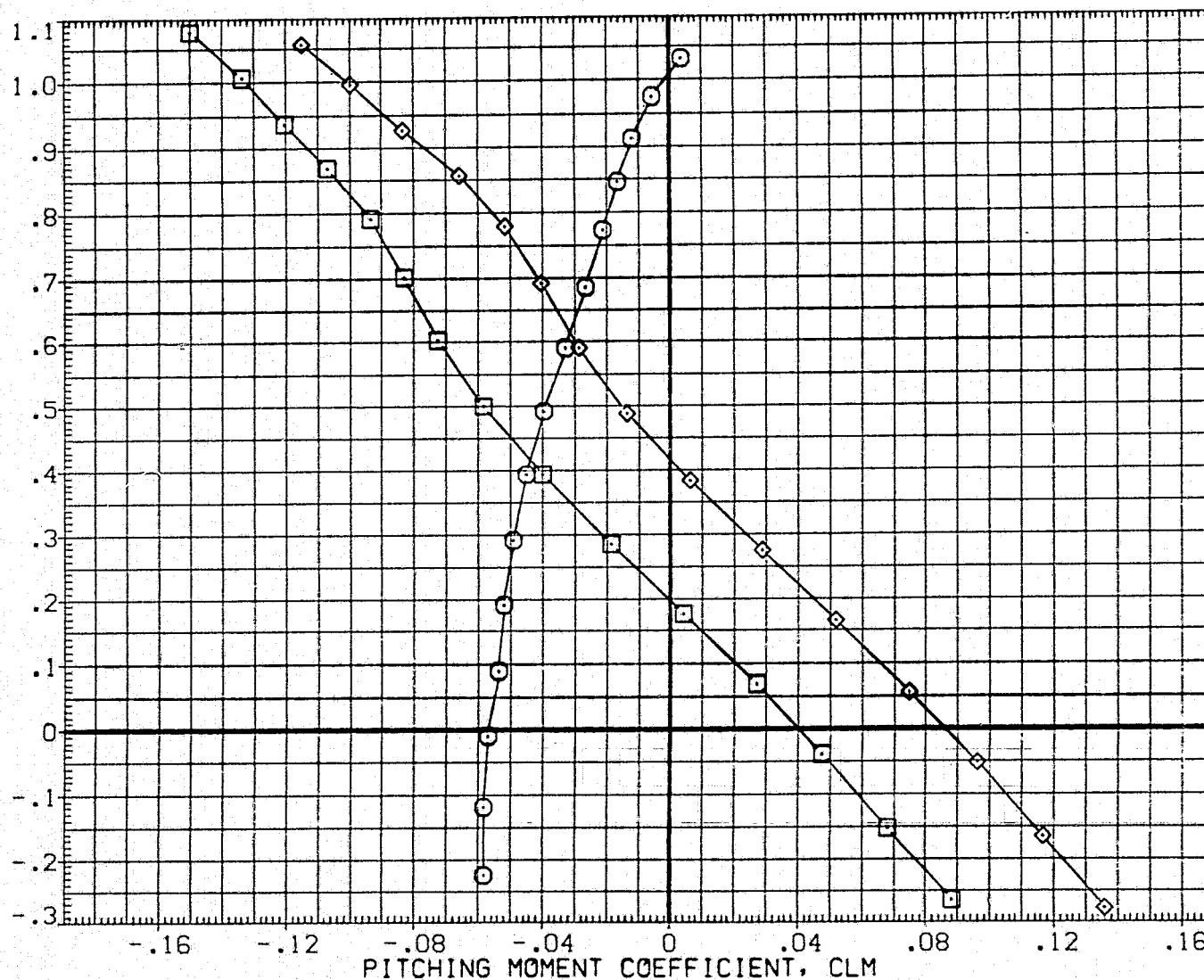


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(D)MACH = .70

## DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM107)  $\square$  CA5 KI FO V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM125)  $\square$  CA5 KI FO HIS.1A V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM108)  $\diamond$  CA5 KI FO HIS.1A V9.1 (PLUS. ORB TC5 AT38.3 )

STAB

IORB

S5-6

-2.000 4.000 .000  
 -3.200 4.000 .000

## REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

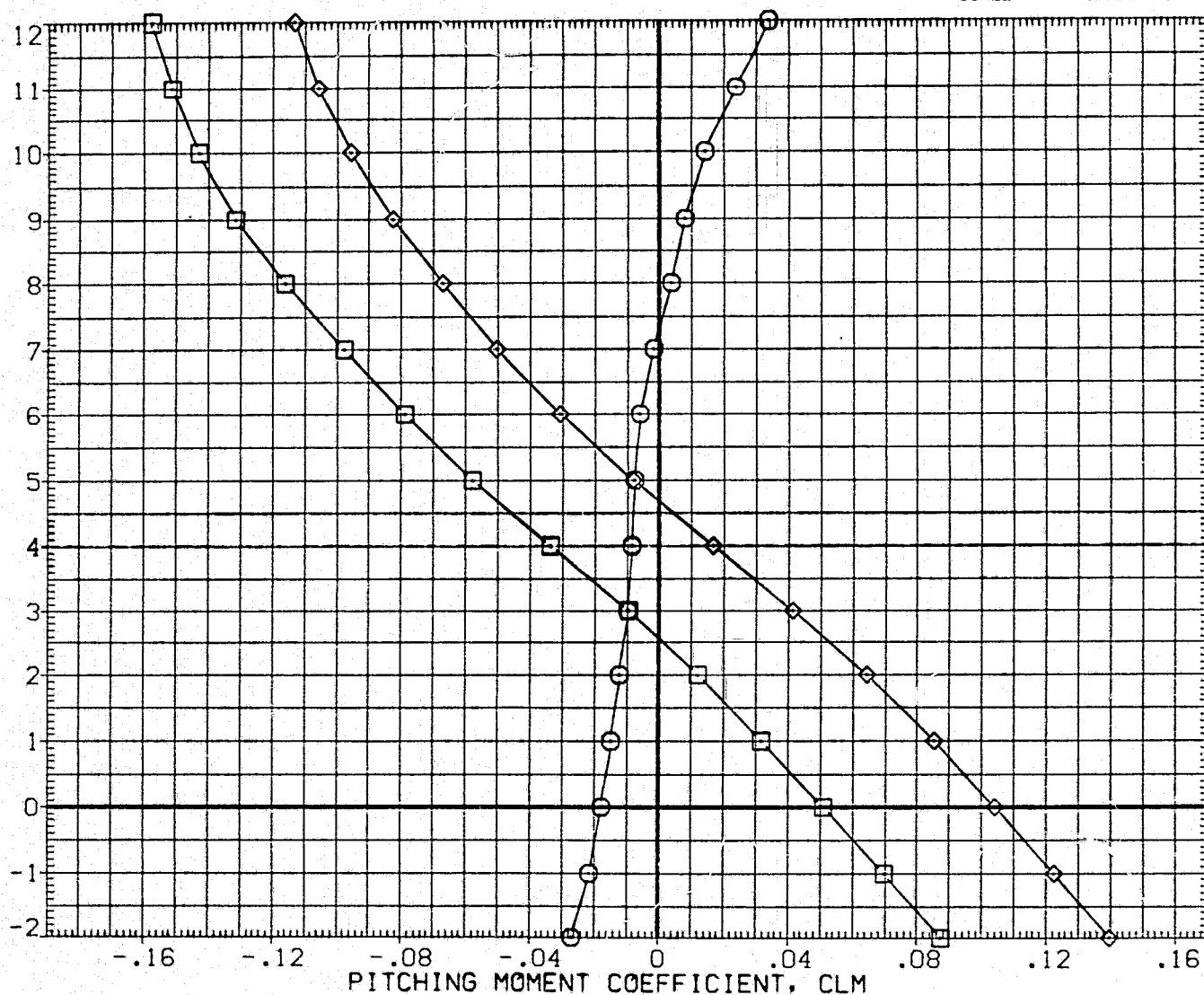


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(A)MACH = .30

PAGE 1136

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM107) □ CAS K1 FO V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM125) ◇ CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM108) ◇ CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )

STAB 10RB S5-6  
 -2.000 4.000 .000  
 -3.200 4.000 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

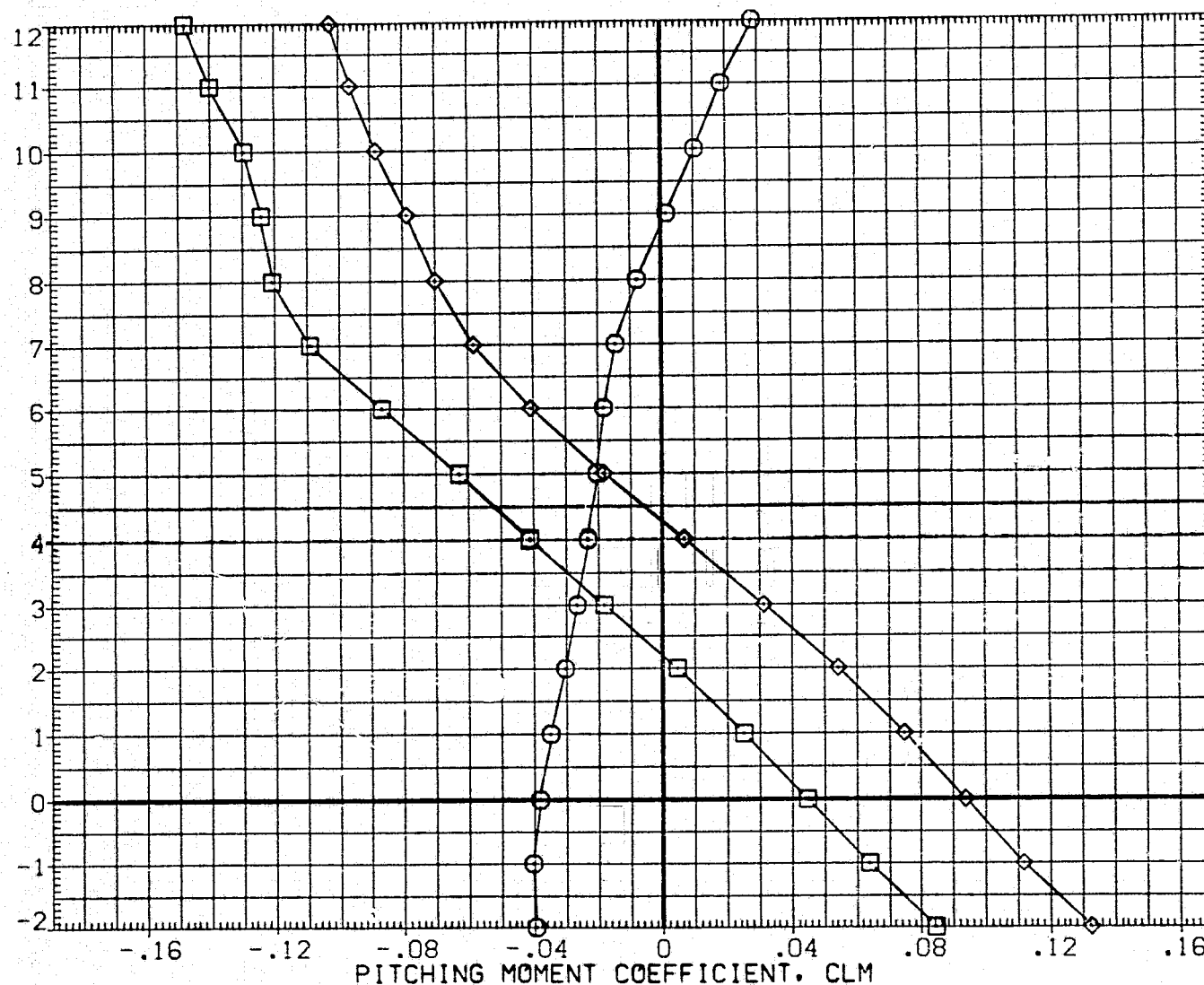


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM107)	□ CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM125)	□ CAS K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )
(RGM108)	◇ CAS K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )

STAB

10RB

SS-6

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

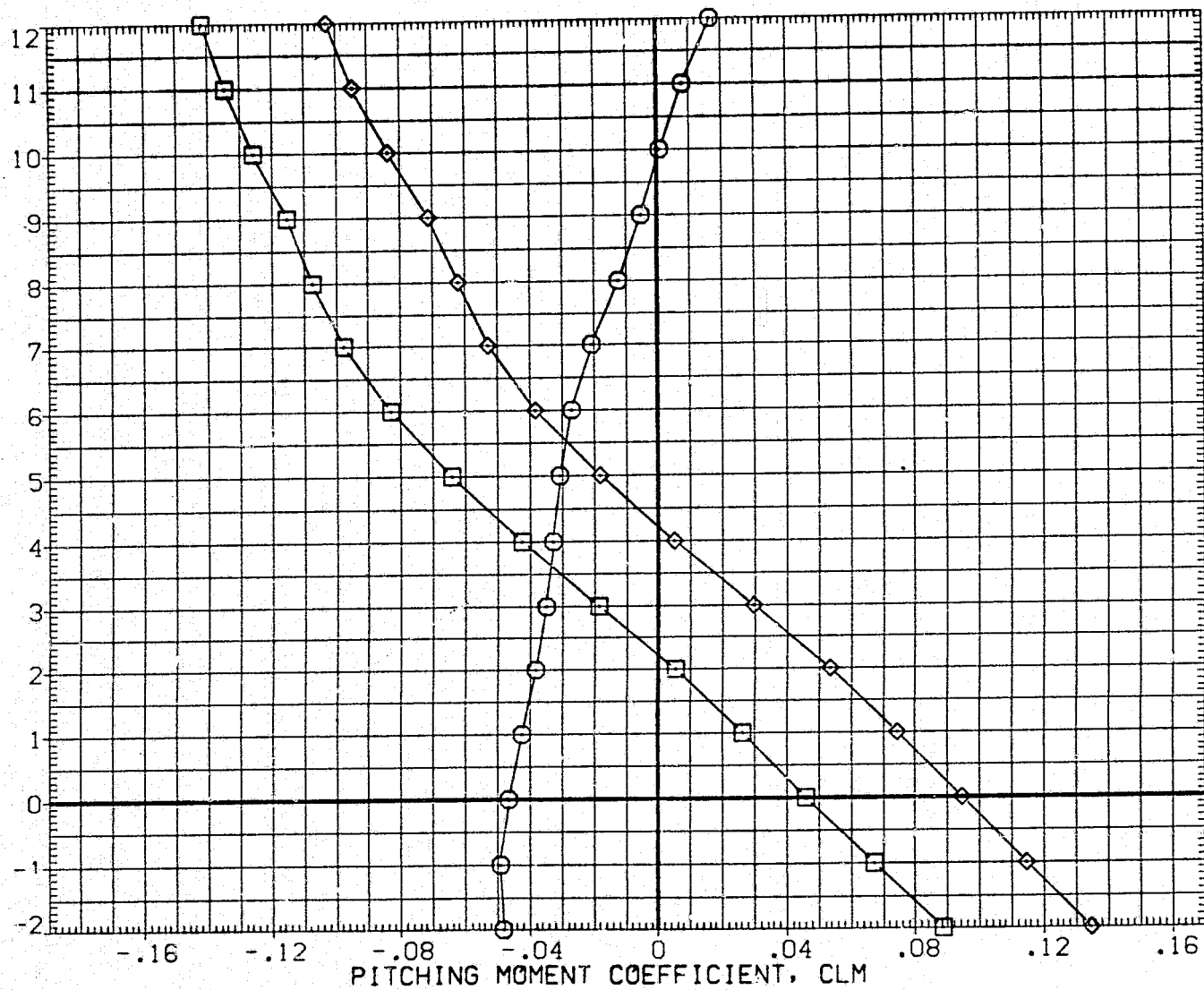


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(C)MACH = .60

PAGE 1138

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM107)  $\square$  CAS K1 FO V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM125)  $\diamond$  CAS K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM108)  $\circ$  CAS K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )

STAB

IORB

S5-6

-2.000 4.000 .000  
 -3.200 4.000 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

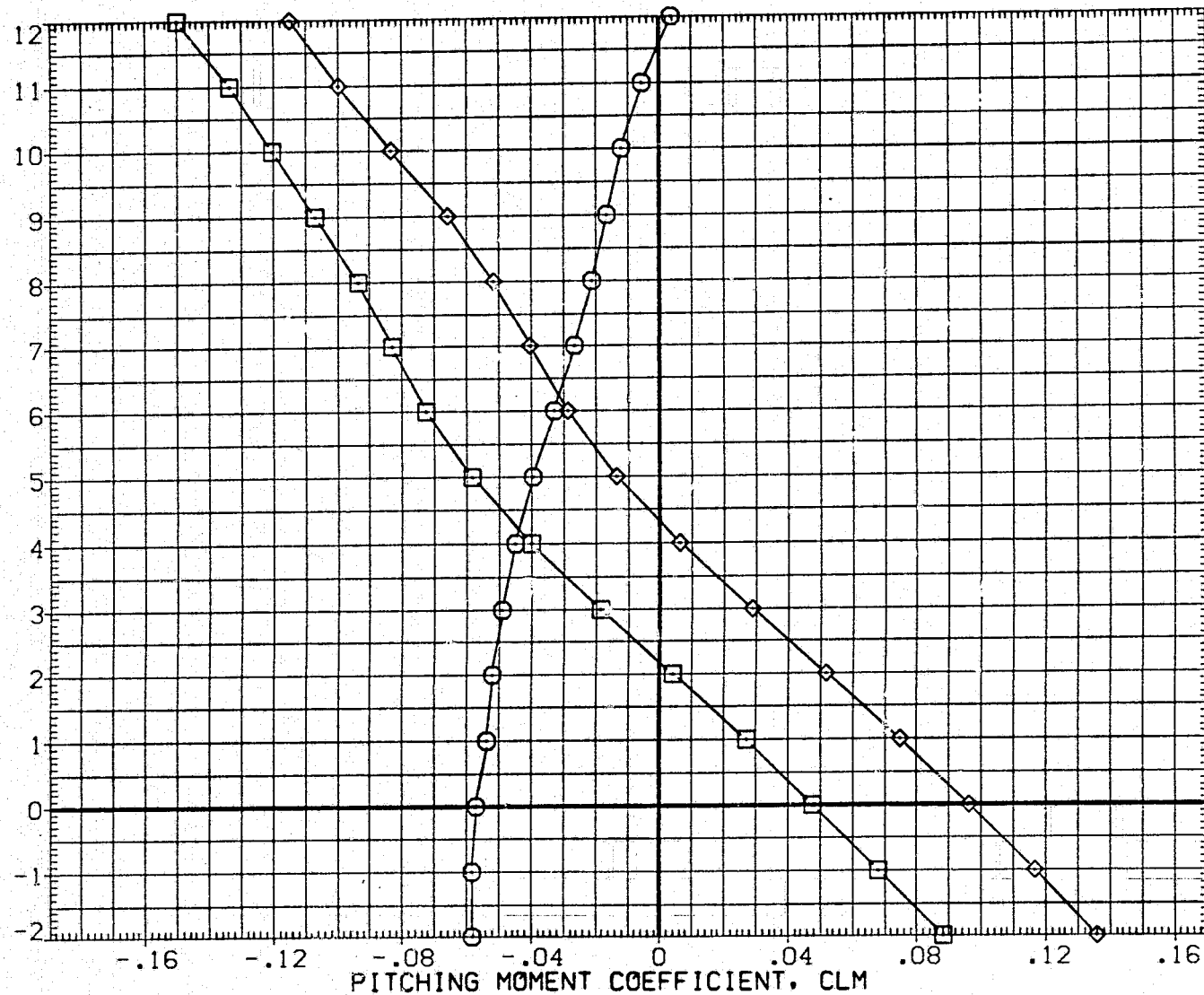


FIG. 242 BASIC 747+ORB(4 DEG), STABILIZER EFFECT, FLAPS UP FERRY

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6	REFERENCE INFORMATION		
(RGM081)	CAS K1 F0 H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	7.850	20.000	SREF	5500.0000	SQ.FT.
(FGM065)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	9.700	45.000	LREF	327.8000	IN.
					BREF	2348.0000	IN.
					XMRP	1339.9100	IN. XC
					YMRP	.0000	IN. YC
					ZMRP	190.7500	IN. ZC
					SCALE	.0300	

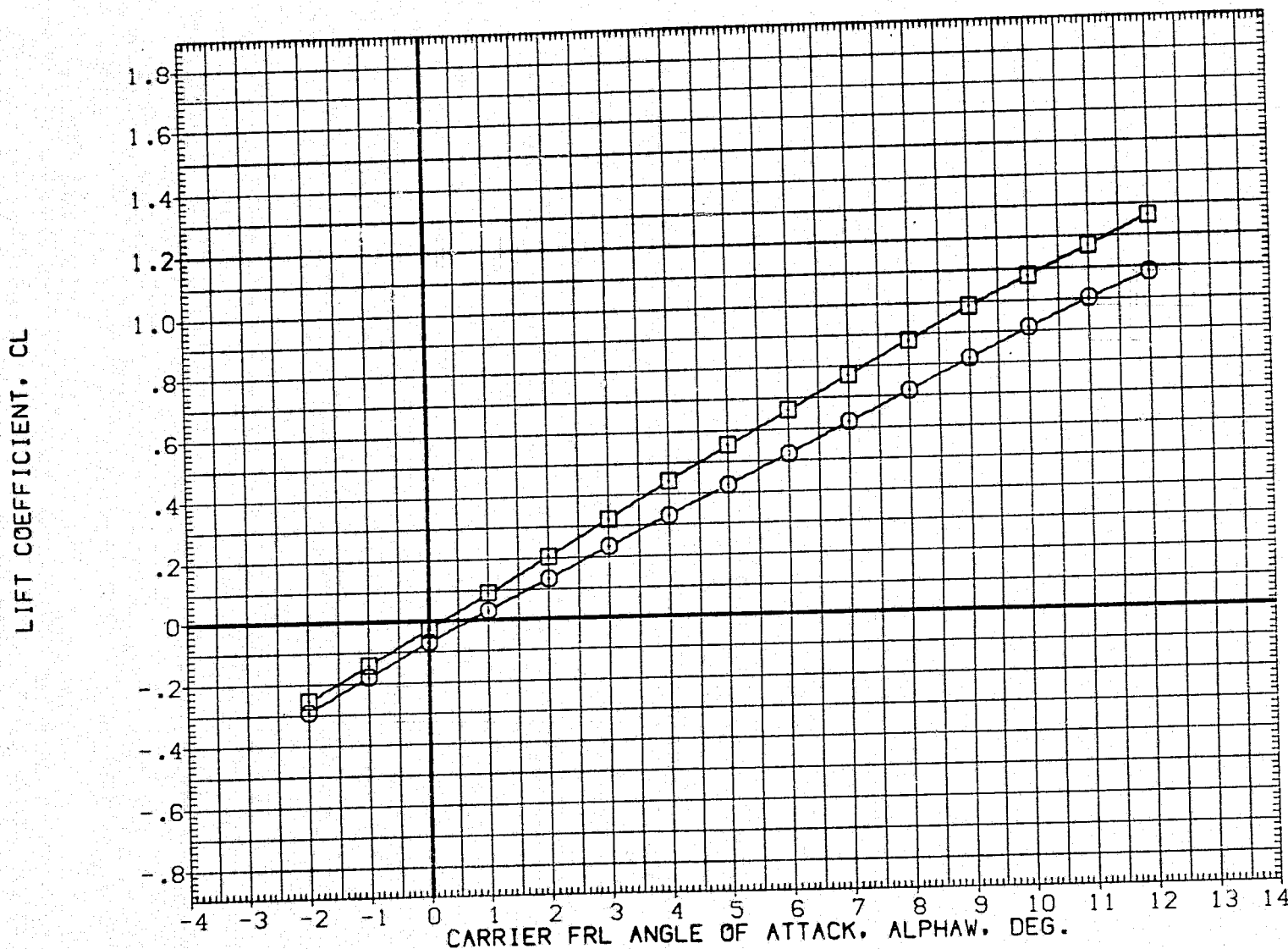


FIG. 243 747+ORB, EFFECT OF FLAPS ON LAUNCH CONFIG.  
 (A)MACH = .50



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CAS K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 ) 1.000 7.850 20.000  
 (FGM065)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 ) 1.000 9.700 45.000

STAB 10RB SS-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

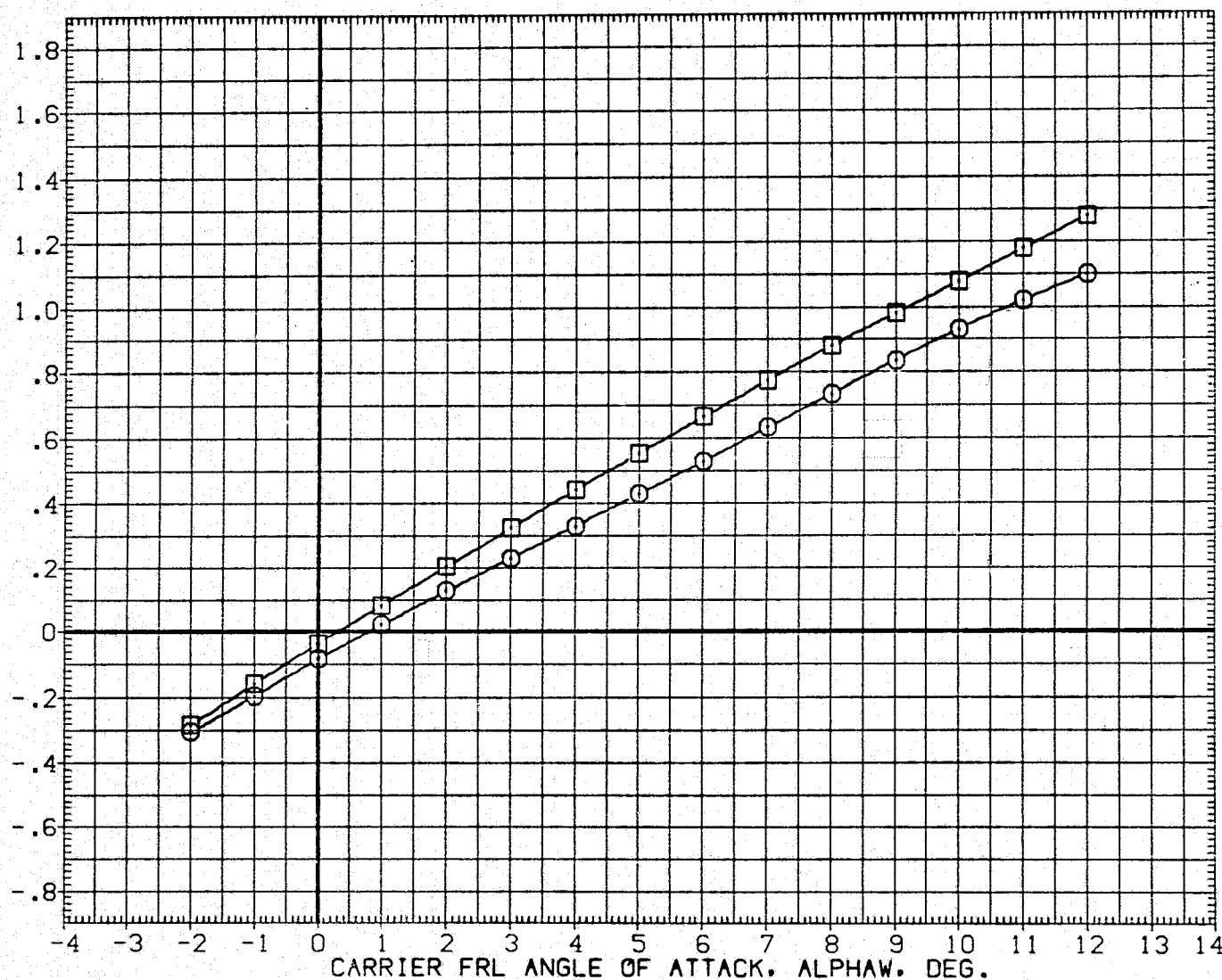


FIG. 243 747+ORB, EFFECT OF FLAPS ON LAUNCH CONFIG.

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)	○	CA5 K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )
(FGM065)	□	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

STAB

10RB

S5-6

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

LIFT COEFFICIENT, CL

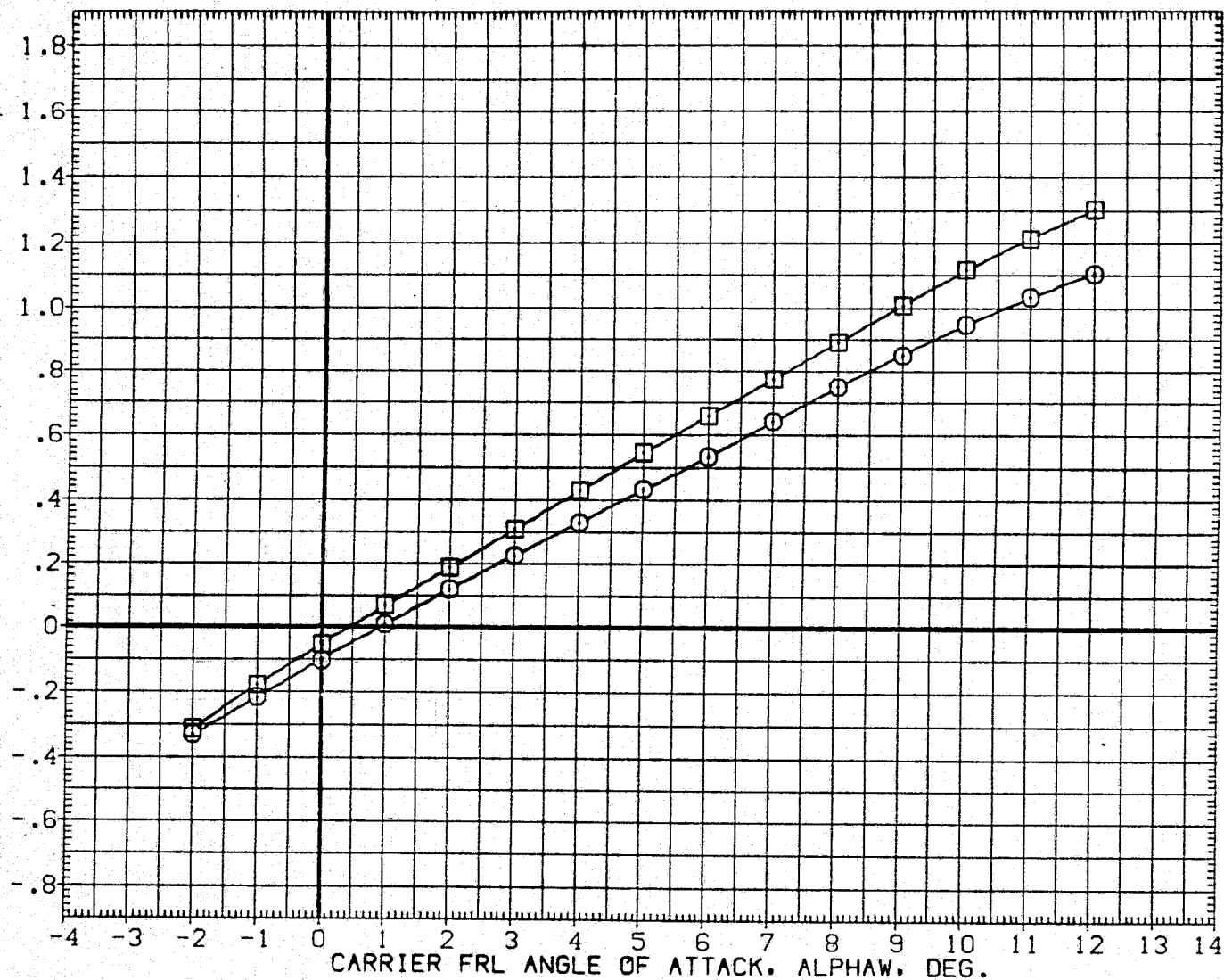


FIG. 243 747+ORB, EFFECT OF FLAPS ON LAUNCH CONFIG.

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM081)	○ CAS K1 F0 H15.6 V9.1 (PLUS. ORB TCS AT38.2)	1.000	7.850	20.000
(FGM065)	□ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	1.000	9.700	45.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

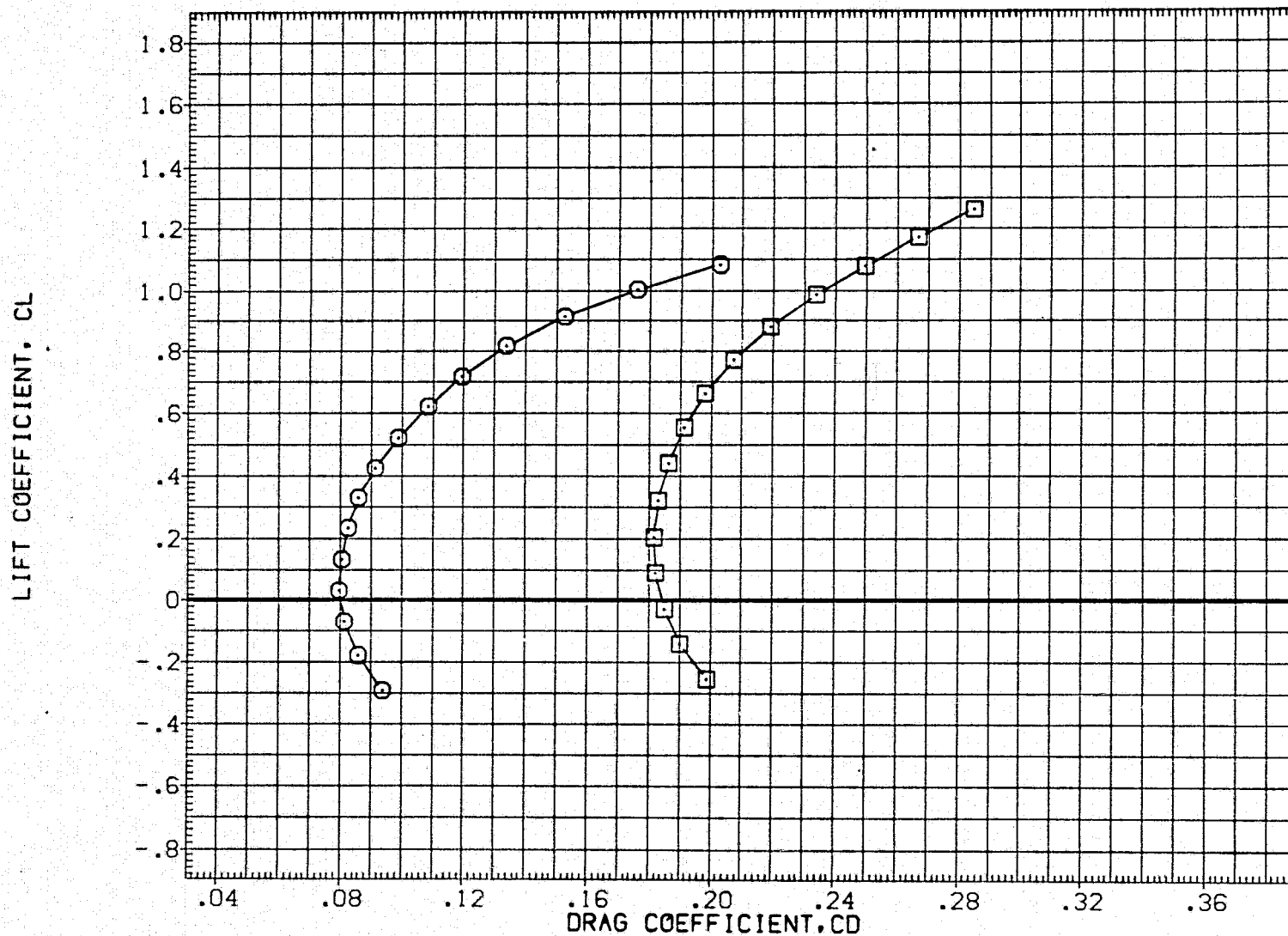


FIG. 243 747+ORB, EFFECT OF FLAPS ON LAUNCH CONFIG.

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\bigcirc$  CA5 KI F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2)  
 (FGM065)  $\square$  CA5 KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)

STAB 10RB S5-6  
 1.000 7.850 20.000  
 1.000 9.700 45.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

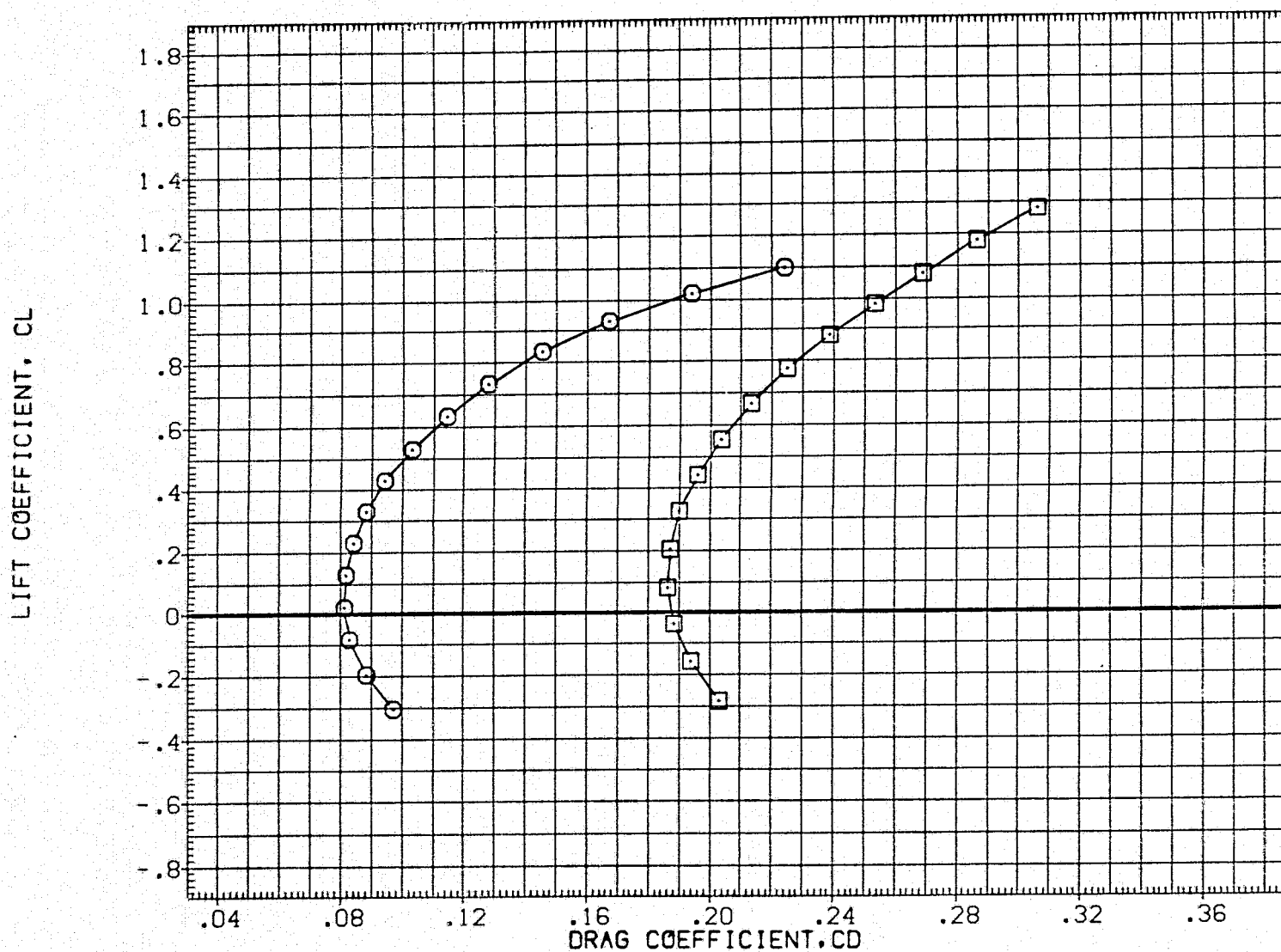


FIG. 243 747+ORB, EFFECT OF FLAPS ON LAUNCH CONFIG.

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CAS K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (FGM065)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

STAB 10RB S5-6  
 1.000 7.850 20.000  
 1.000 9.700 45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

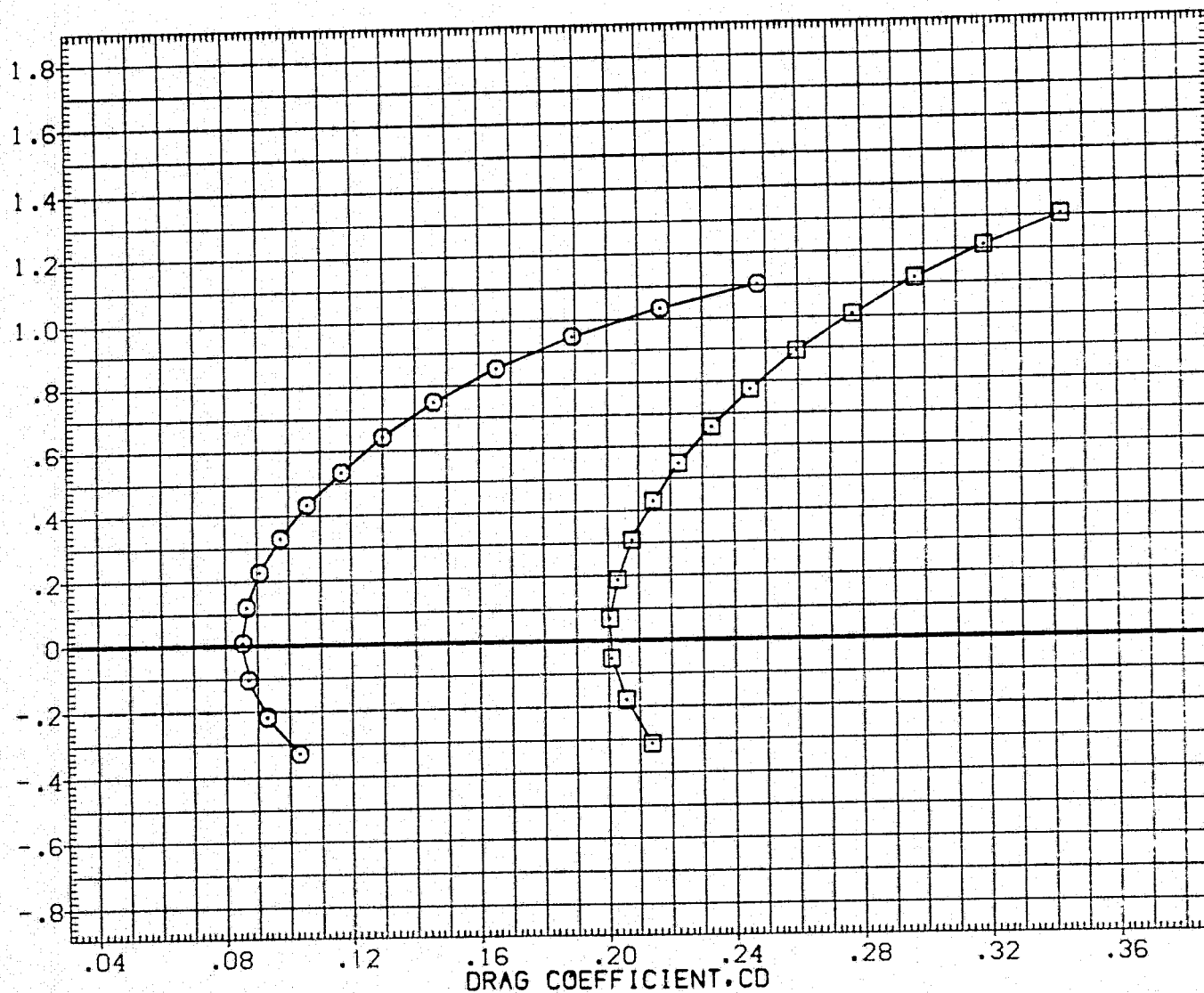


FIG. 243 747+ORB, EFFECT OF FLAPS ON LAUNCH CONFIG.

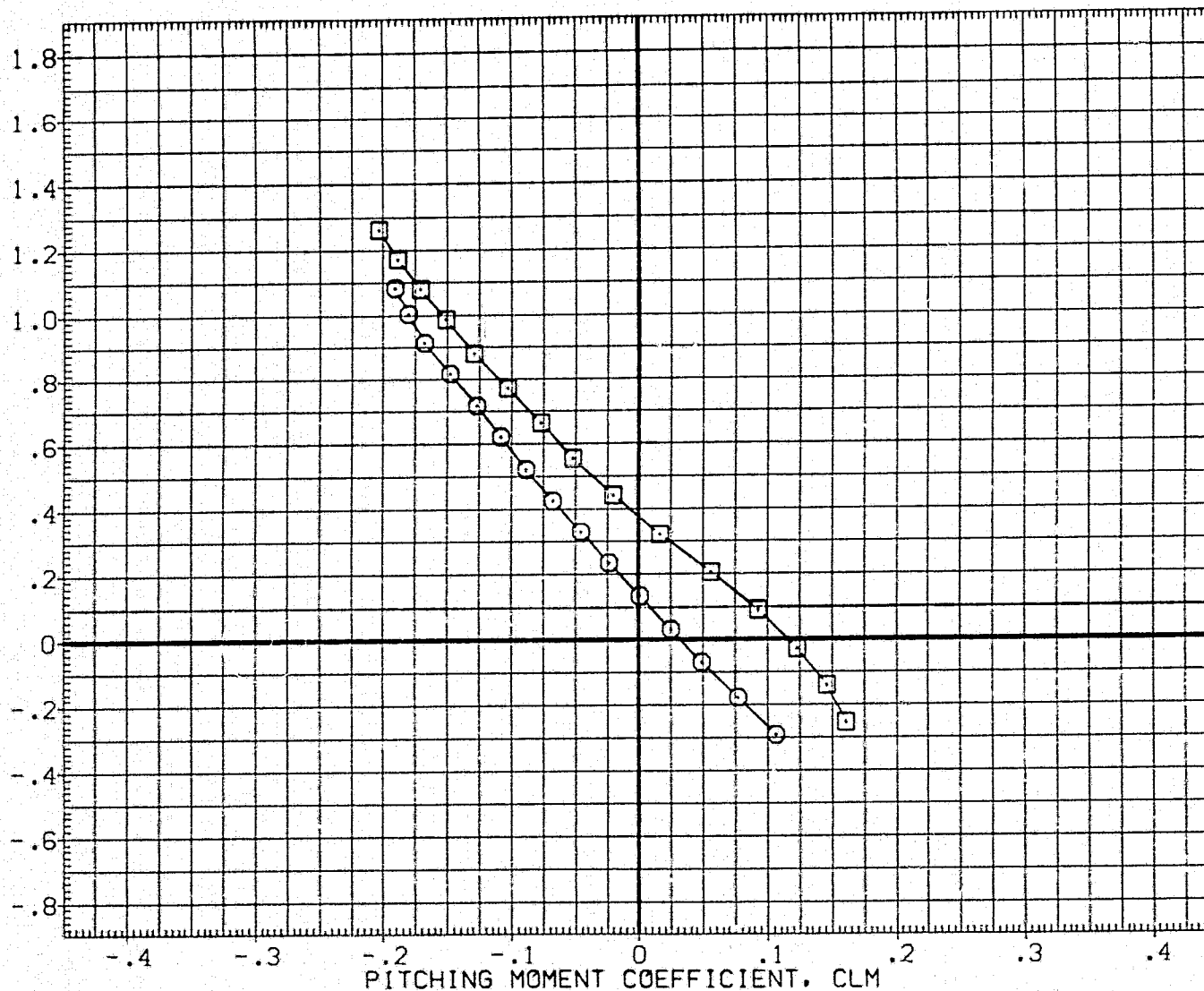
(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM081)	CAS K1 F0 H15.6 V9.1 (PLUS. ORB TCS AT38.2)
(FGM065)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)

STAB	IORB	S5-6
1.000	7.850	20.000
1.000	9.700	45.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

LIFT COEFFICIENT, CL



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\bigcirc$  CAS K1 F0 H15.6 V9.1 (PLUS. ORB TCS AT38.2 )  
 (FGM065)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )

STAB

IORB

S5-6

1.000 7.850 20.000  
 1.000 9.700 45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

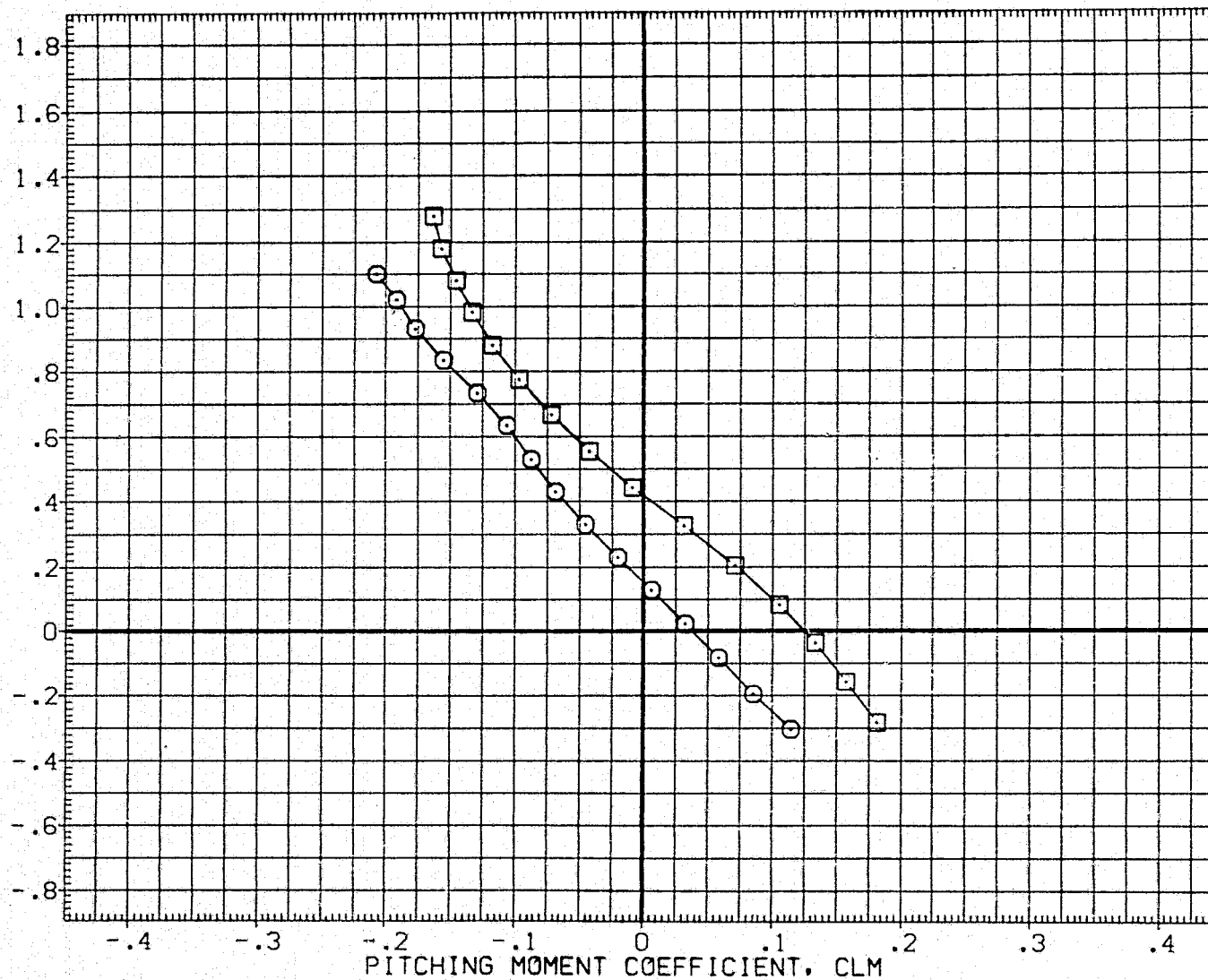


FIG. 243 747+ORB, EFFECT OF FLAPS ON LAUNCH CONFIG.

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CAS K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (FGM065)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

STAB 10RB SS-6  
 1.000 7.850 20.000  
 1.000 9.700 45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

LIFT COEFFICIENT, CL

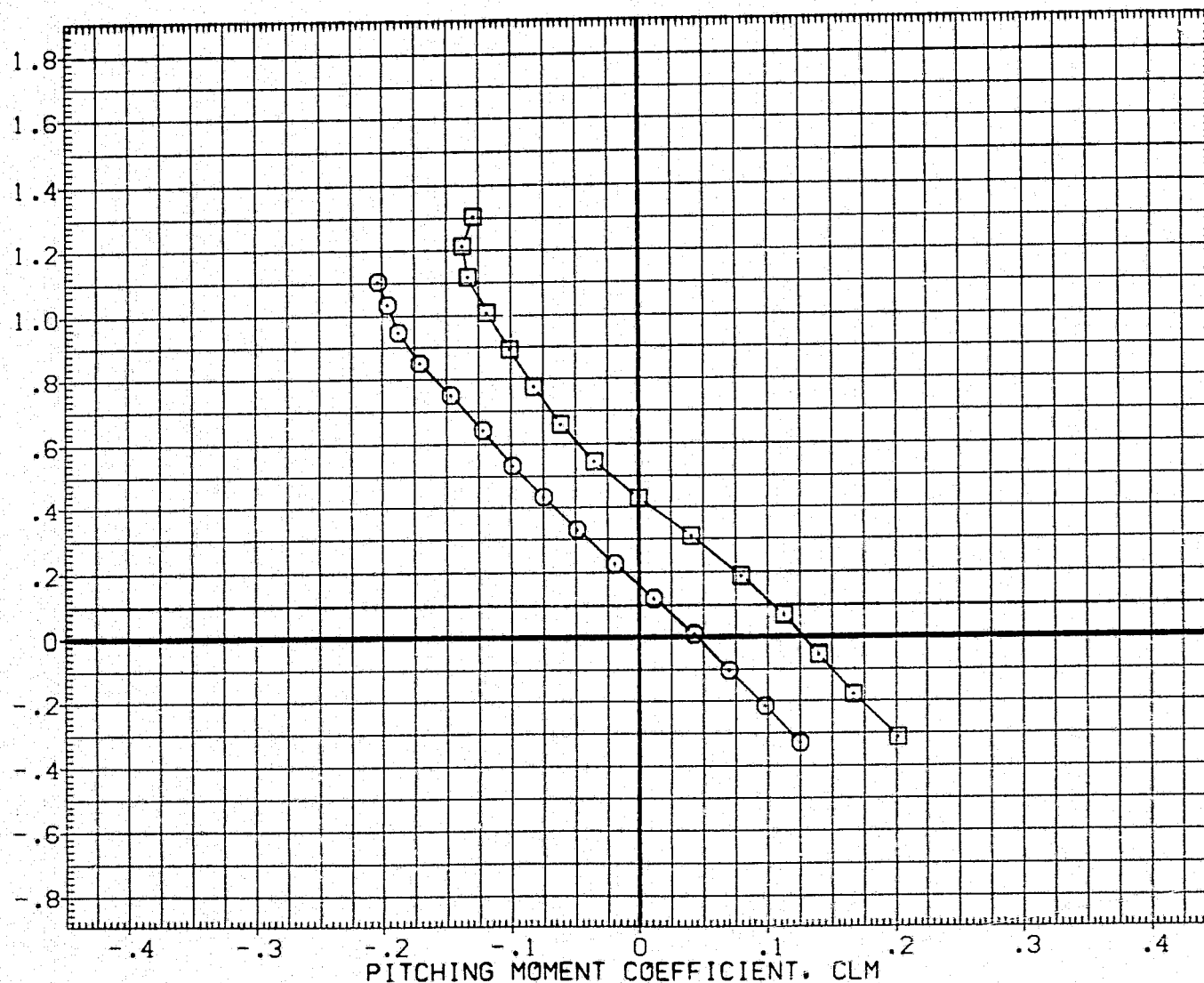


FIG. 243 747+0RB, EFFECT OF FLAPS ON LAUNCH CONFIG.

(C)MACH = .70



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	IORB	S5-6
(RGM081)	○ CAS K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	7.850	20.000
(FGM065)	□ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	9.700	45.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

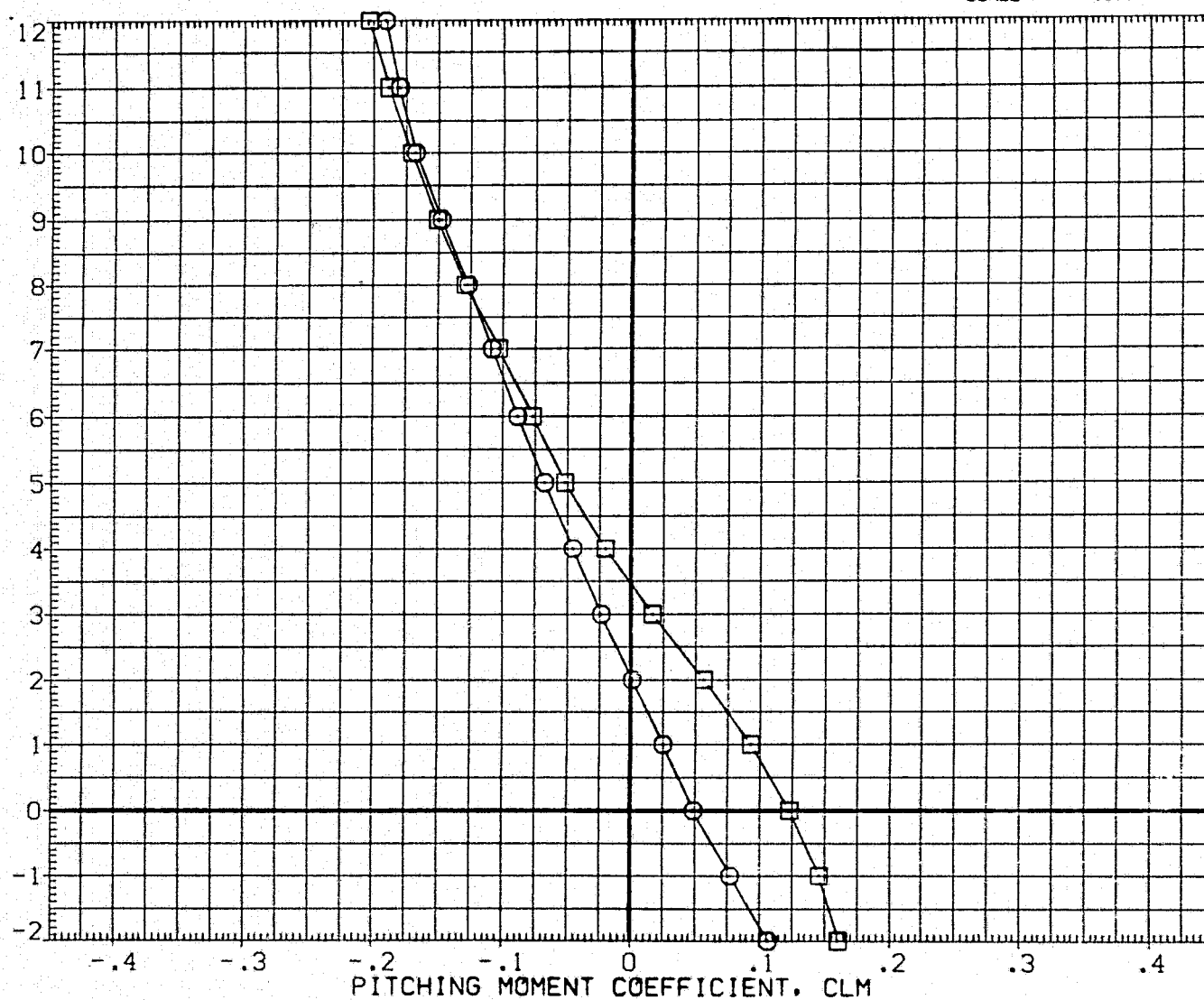


FIG. 243 747+ORB, EFFECT OF FLAPS ON LAUNCH CONFIG.

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM081)  $\square$  CAS K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 ) 1.000 7.850 20.000  
 (FGM065)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 ) 1.000 9.700 45.000

STAB

IORB

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

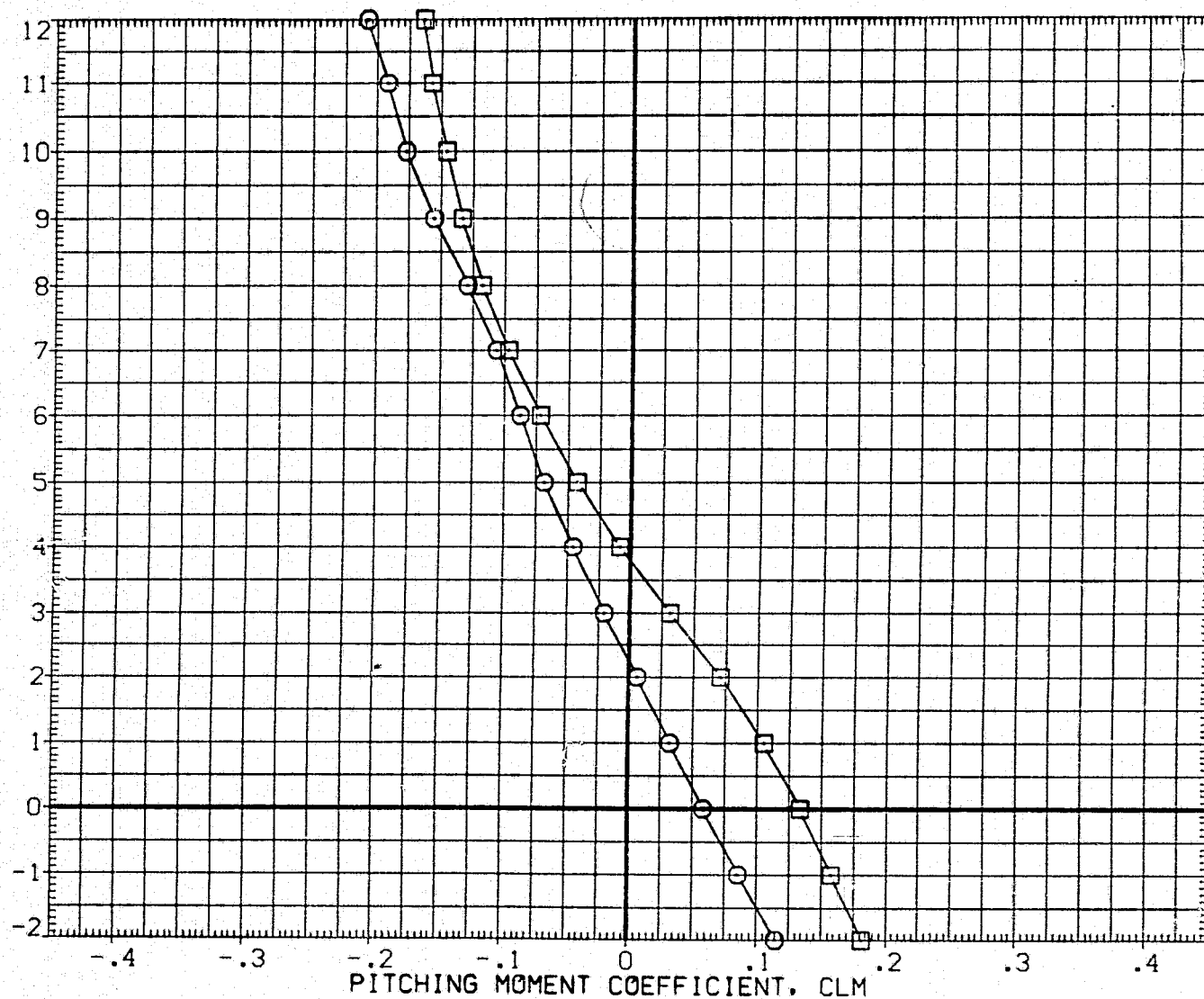


FIG. 243 747+ORB, EFFECT OF FLAPS ON LAUNCH CONFIG.

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM081) ○	CAS K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2)
(FGM065) □	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)

STAB	IORB	S5-6
1.000	7.850	20.000
1.000	9.700	45.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

CARRIER FRL ANGLE OF ATTACK, ALPHA, DEG.

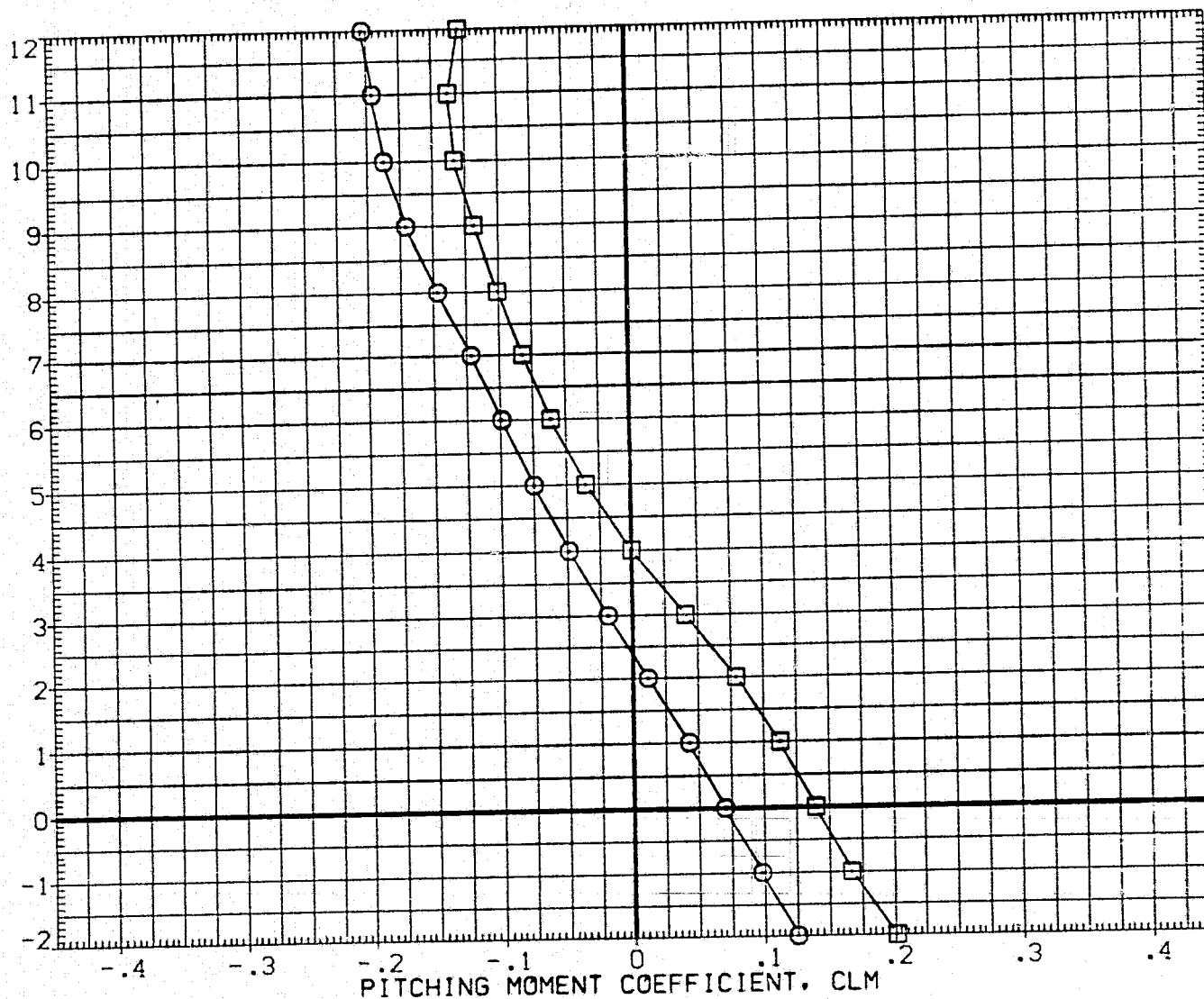


FIG. 243 747+ORB, EFFECT OF FLAPS ON LAUNCH CONFIG.

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM055)	BTWT-1431CA5 K1 FO H15.1A
(RGM041)	BTWT-1431CA5 K1 FO H15.1A V9.1
(RGM043)	BTWT-1431CA5 K1 FO H15.6 V9.1

ALPHA	STAB	SS-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

SIDE FORCE COEFFICIENT, CY

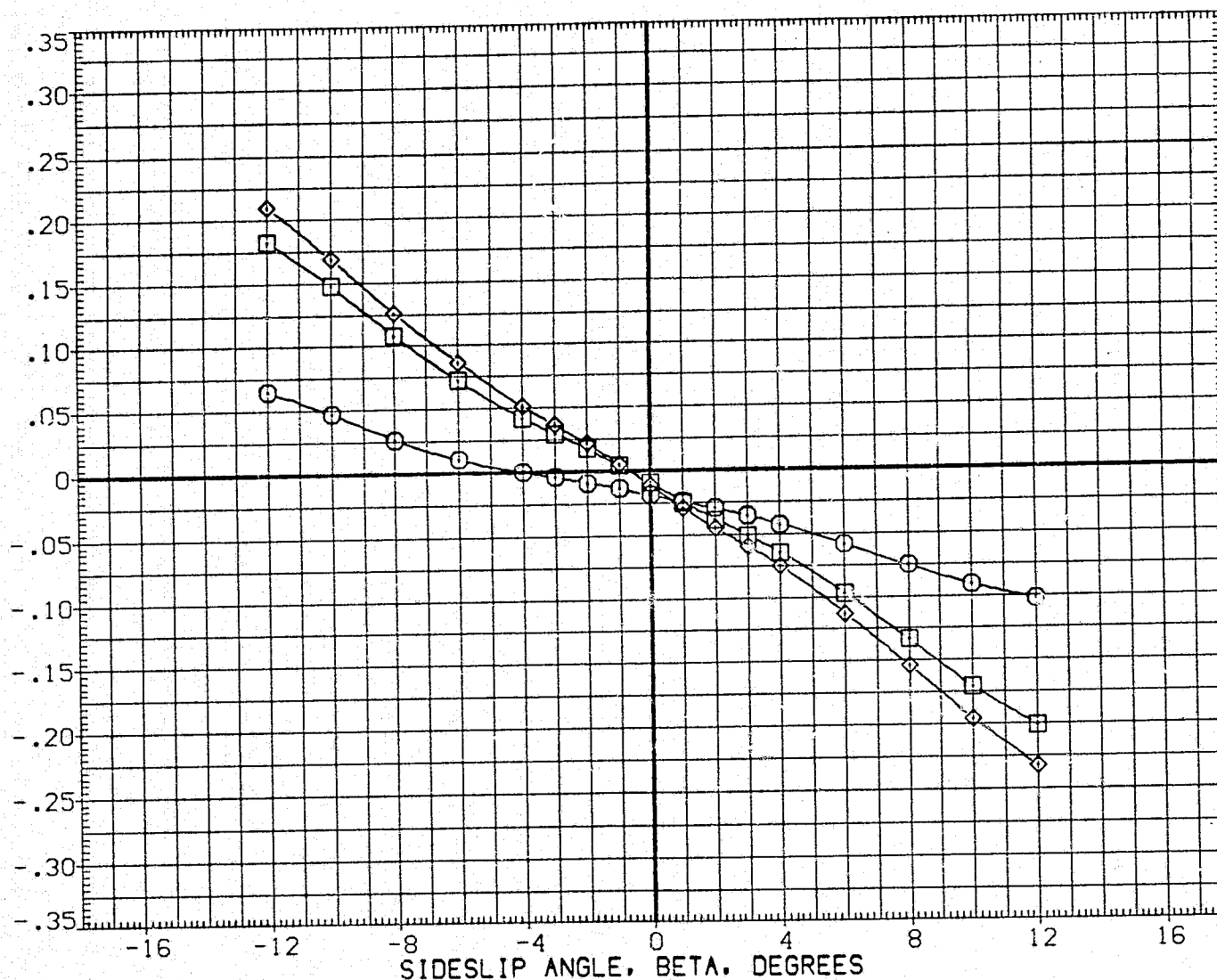


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
(A) MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM055)	BTWT-1431CA5 K1 FO H15.1A
(RGM041)	BTWT-1431CA5 K1 FO H15.1A V9.1
(RGM043)	BTWT-1431CA5 K1 FO H15.6 V9.1

ALPHA1	STAB	SS-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

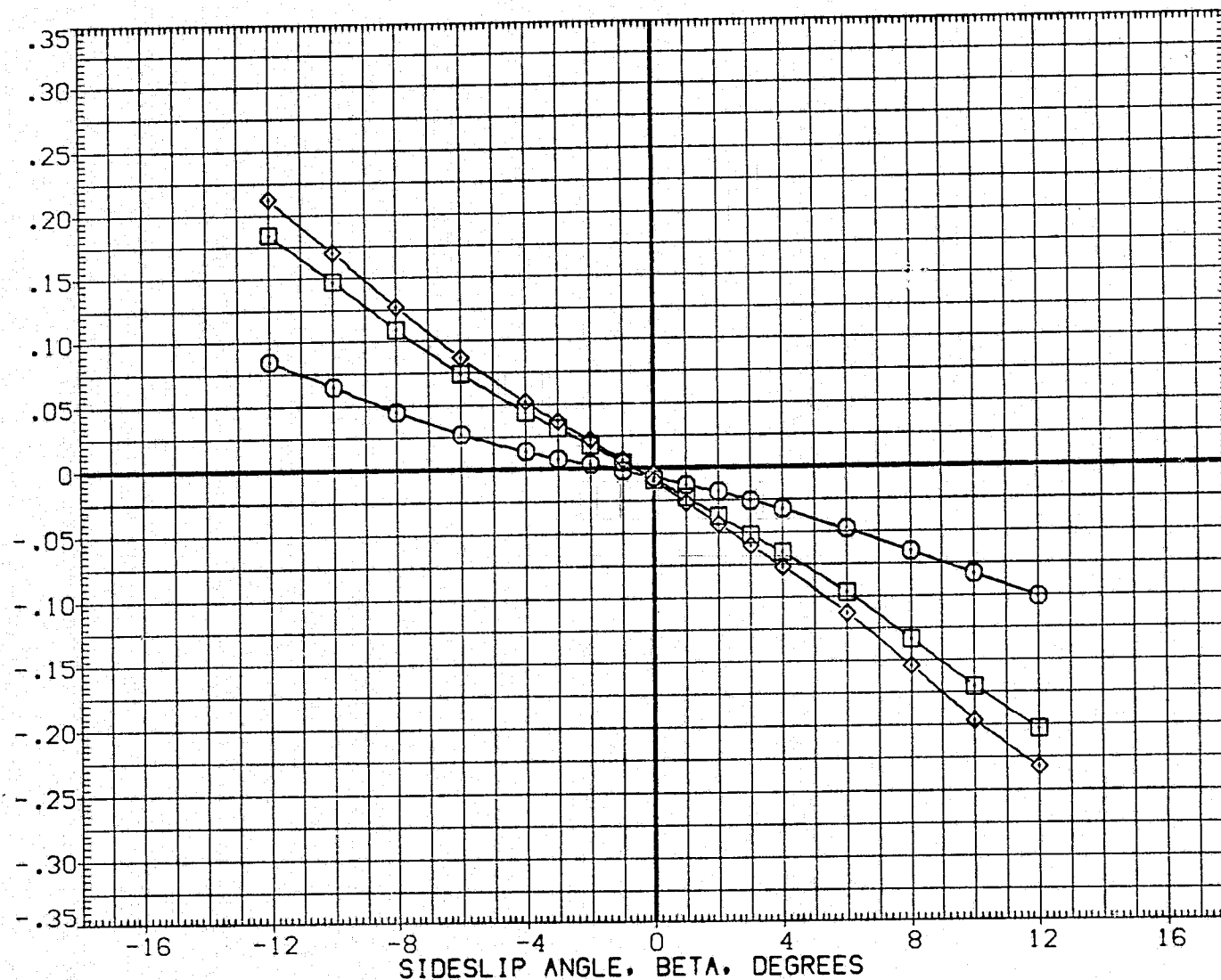


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM055)	BTWT-1431CA5 K1 FO H15.1A
(RGM041)	BTWT-1431CA5 K1 FO H15.1A V9.1
(RGM043)	BTWT-1431CA5 K1 FO H15.6 V9.1

ALPHA	STAB	SS-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

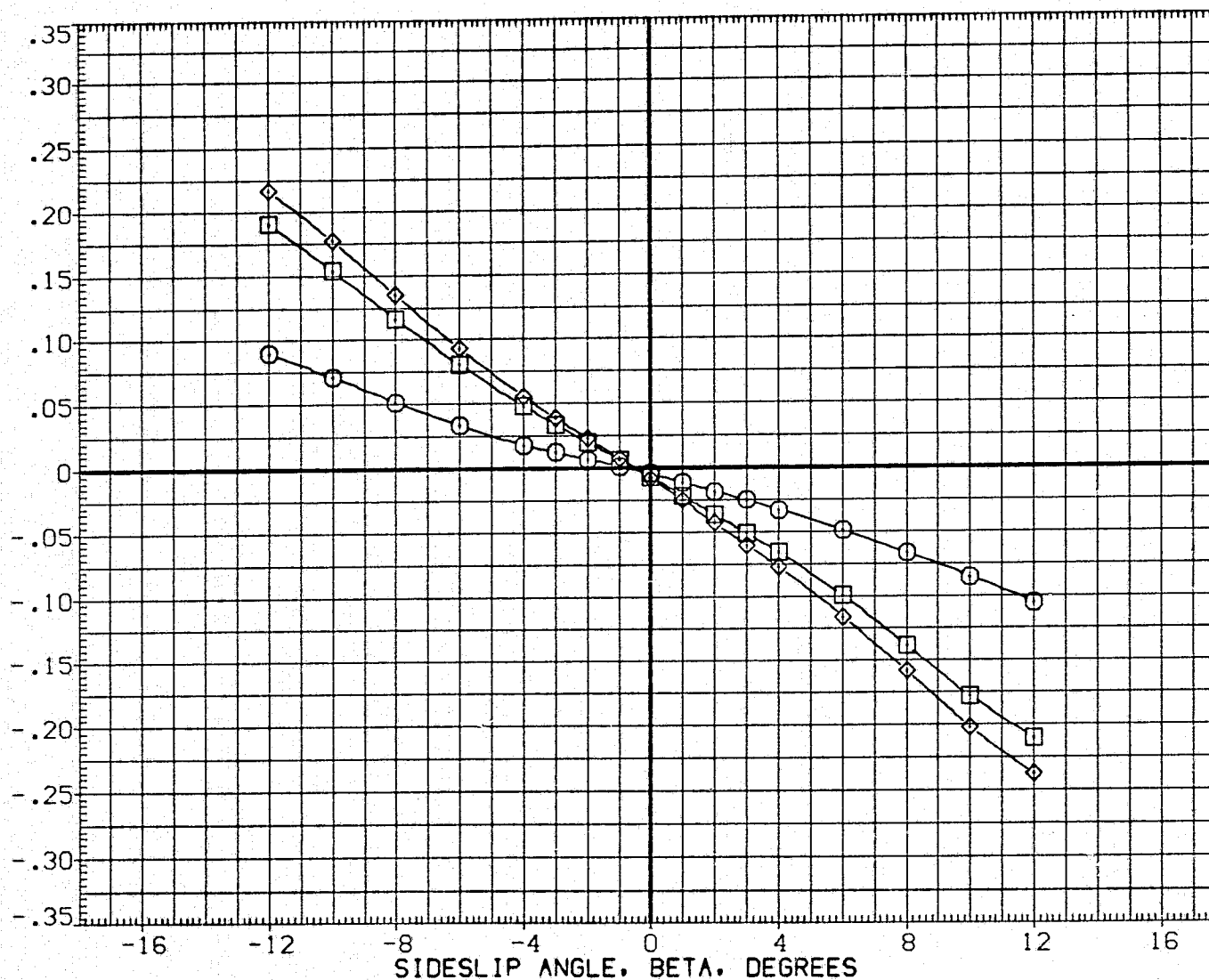


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM055)	BTWT-1431CA5 KI FO HIS.1A
(RGM041)	BTWT-1431CA5 KI FO HIS.1A V9.1
(RGM043)	BTWT-1431CA5 KI FO HIS.6 V9.1

ALPHA1	STAB	S5-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

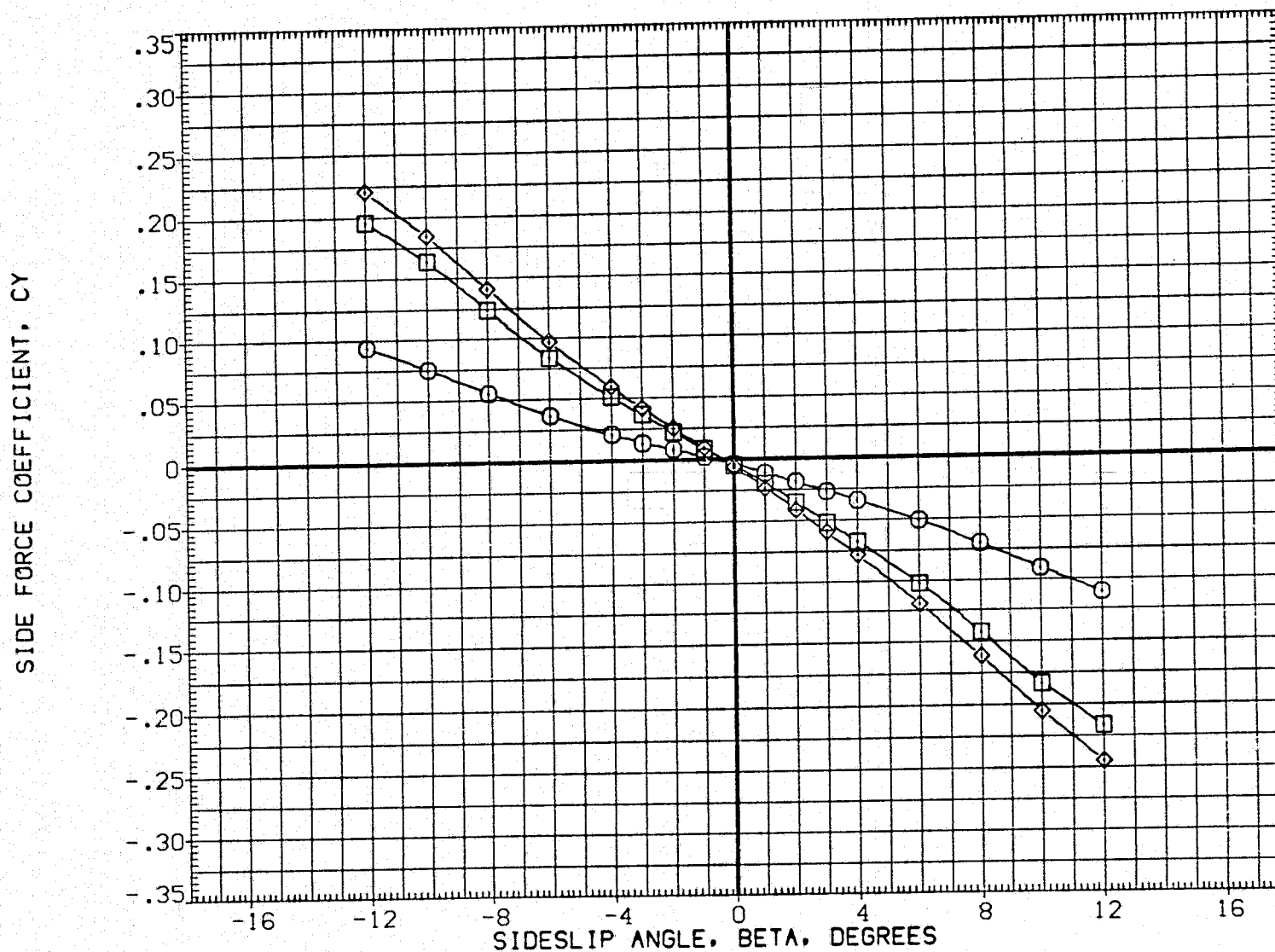


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(R5M055)	BTWT-1431CA5 K1 FO H15.1A
(R5M041)	BTWT-1431CA5 K1 FO H15.1A V9.1
(R5M043)	BTWT-1431CA5 K1 FO H15.6 V9.1

ALPHA	STAB	S5-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

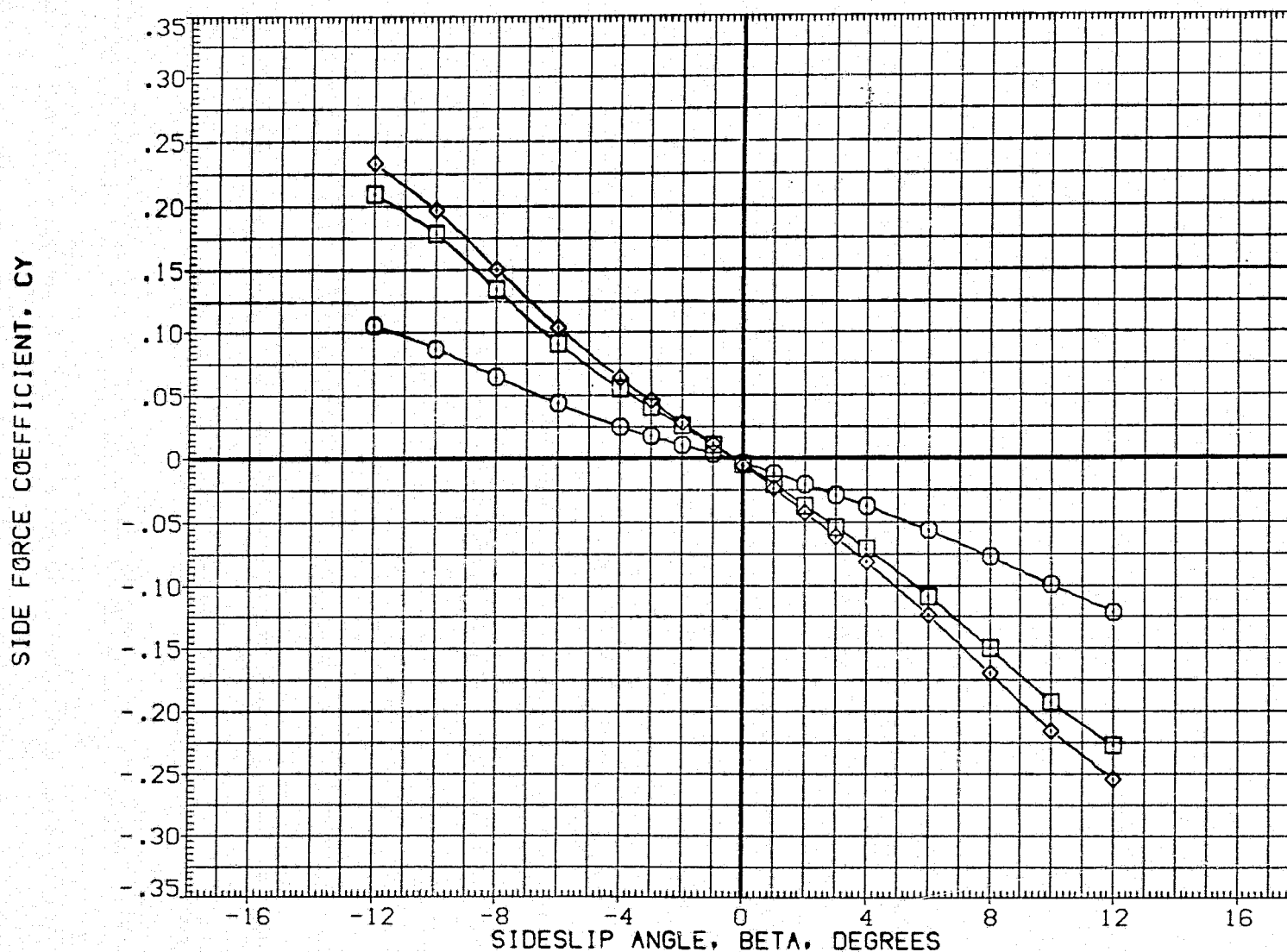


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
(E)MACH = .70



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM055)	BTWT-1431CA5 K1 FO H15.1A
(RGM041)	BTWT-1431CA5 K1 FO H15.1A V9.1
(RGM043)	BTWT-1431CA5 K1 FO H15.6 V9.1

ALPHA	STAB	SS-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

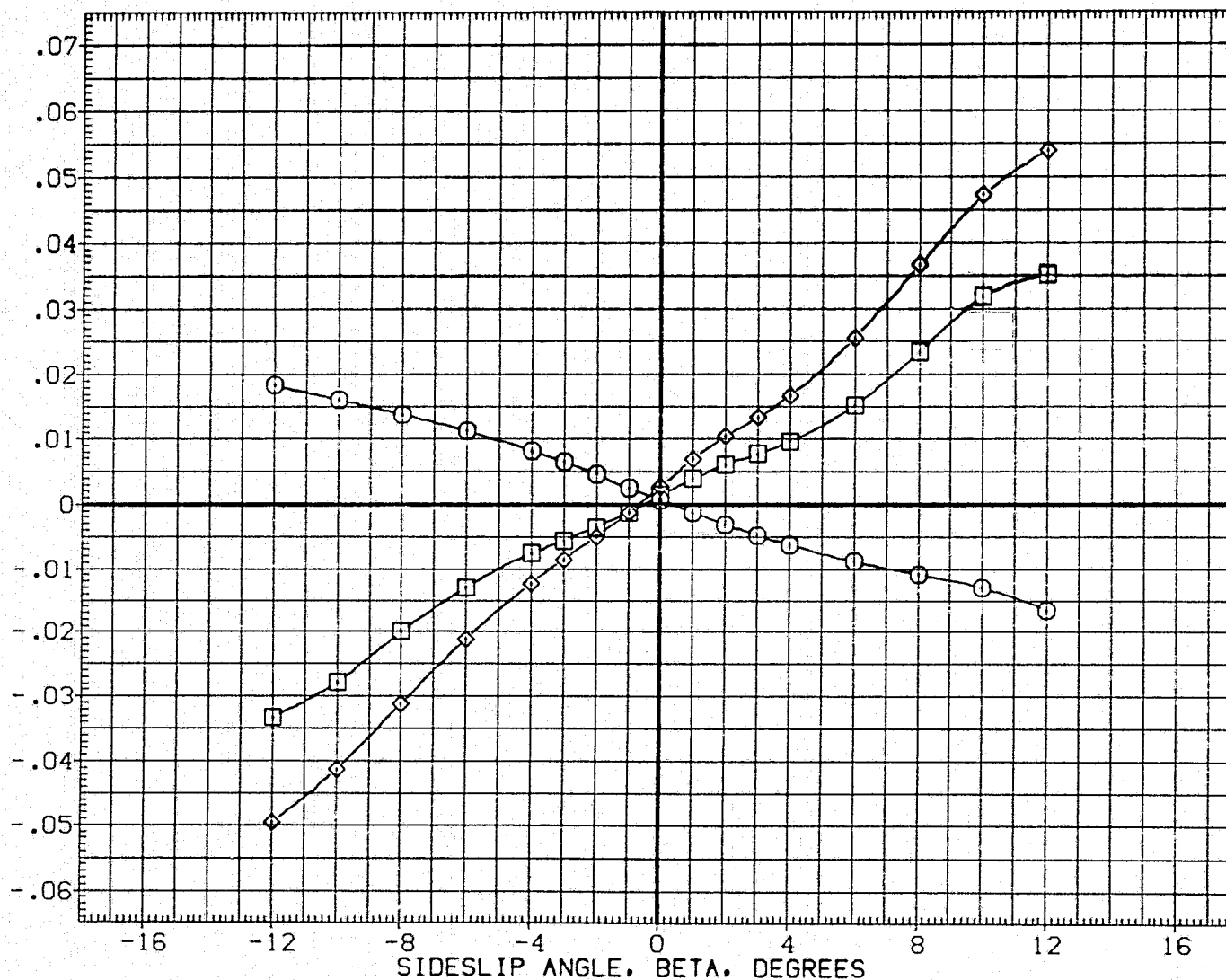


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM055)	BTWT-1431CA5 KI FO H15.1A
(RGM041)	BTWT-1431CA5 KI FO H15.1A V9.1
(RGM043)	BTWT-1431CA5 KI FO H15.6 V9.1

ALPHA	STAB	S5-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0300	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

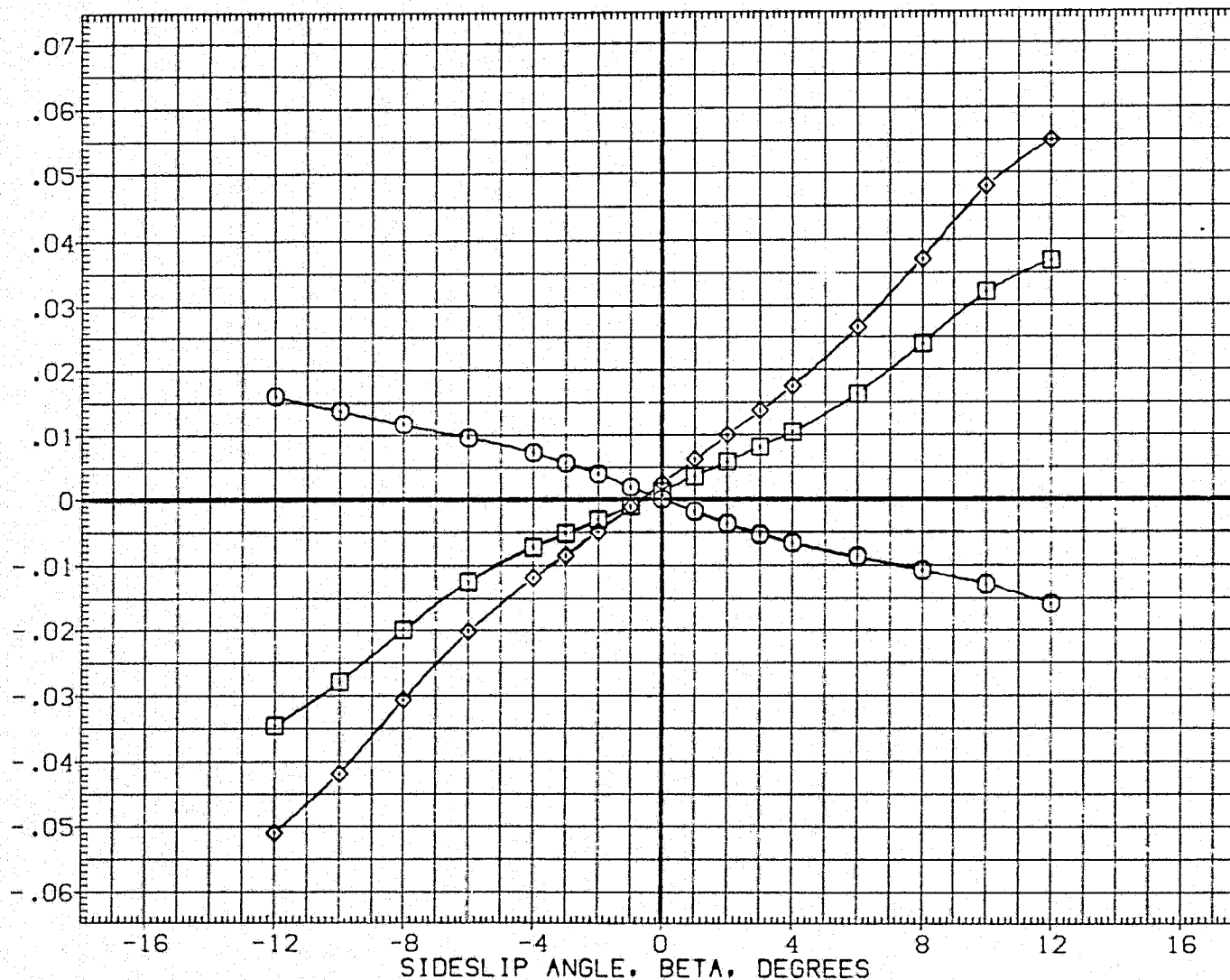


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RUM055)	BTWT-1431CA5 K1 FO H15.1A
(RUM041)	BTWT-1431CA5 K1 FO H15.1A V9.1
(RUM043)	BTWT-1431CA5 K1 FO H15.6 V9.1

ALPHA	STAB	S5-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

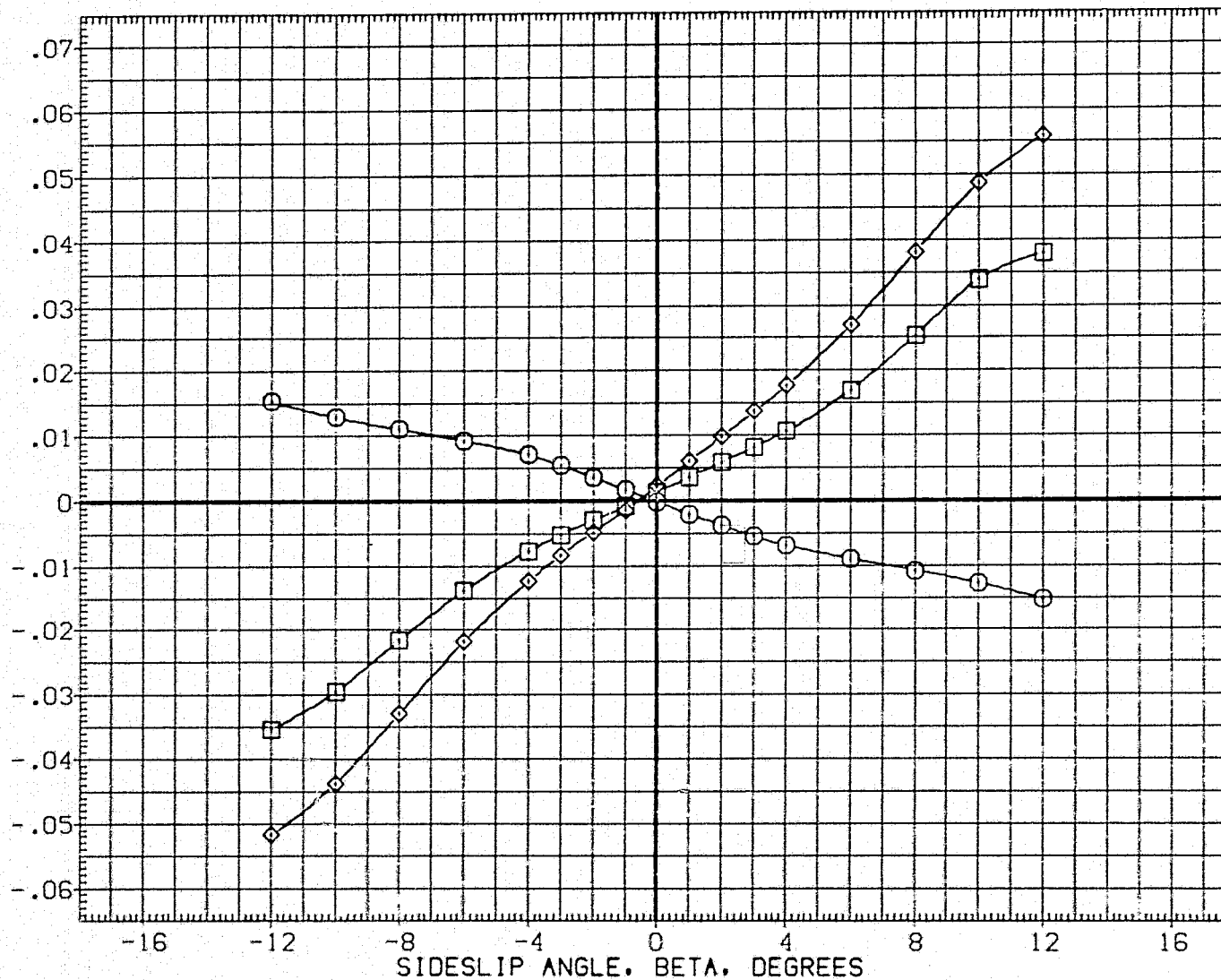


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM055)	BTWT-1431CA5 K1 FO H15.1A
(RGM041)	BTWT-1431CA5 K1 FO H15.1A V9.1
(RGM043)	BTWT-1431CA5 K1 FO H15.6 V9.1

ALPHA1	STAB	S5-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRF	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

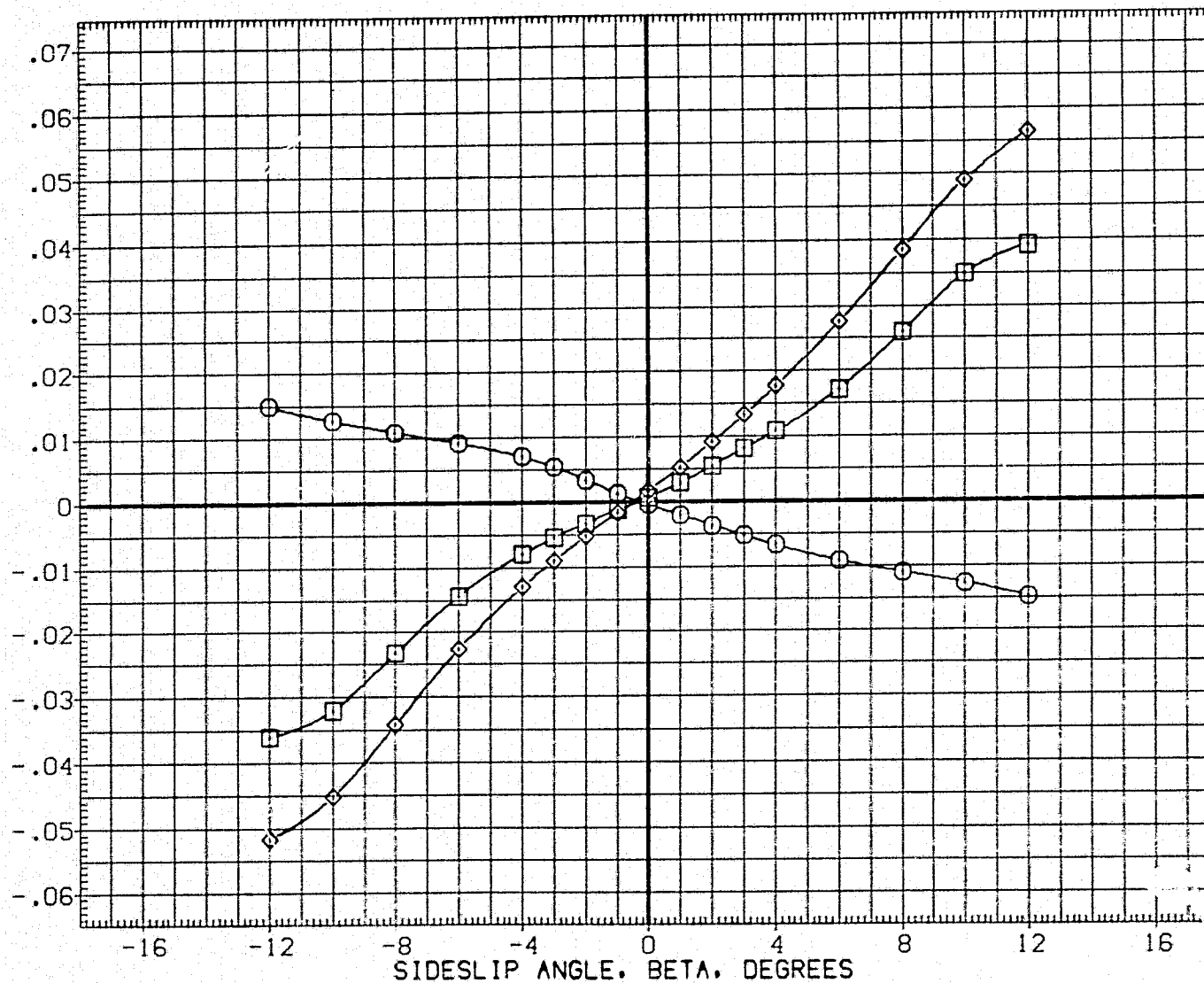


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMO55)	BTWT-1431CA5 KI FO H15.1A
(RGMO41)	BTWT-1431CA5 KI FO H15.1A V9.1
(RGMO43)	BTWT-1431CA5 KI FO H15.6 V9.1

ALPHA	STAB	SS-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

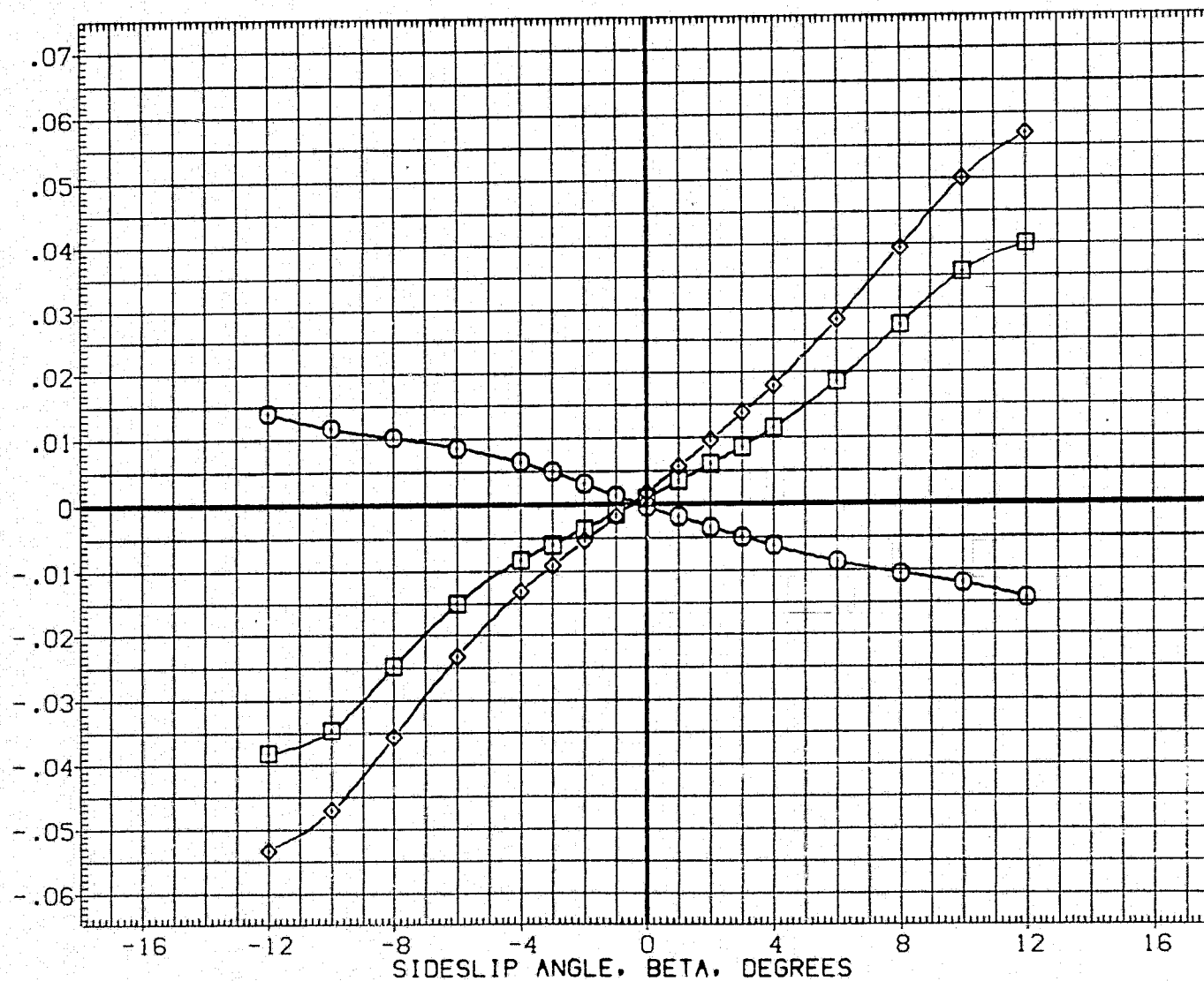


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
(E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM055)	BTWT-1431CA5 K1 FO HIS.1A
(RGM041)	BTWT-1431CA5 K1 FO HIS.1A V9.1
(RGM043)	BTWT-1431CA5 K1 FO HIS.6 V9.1

ALPHA	STAB	SS-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

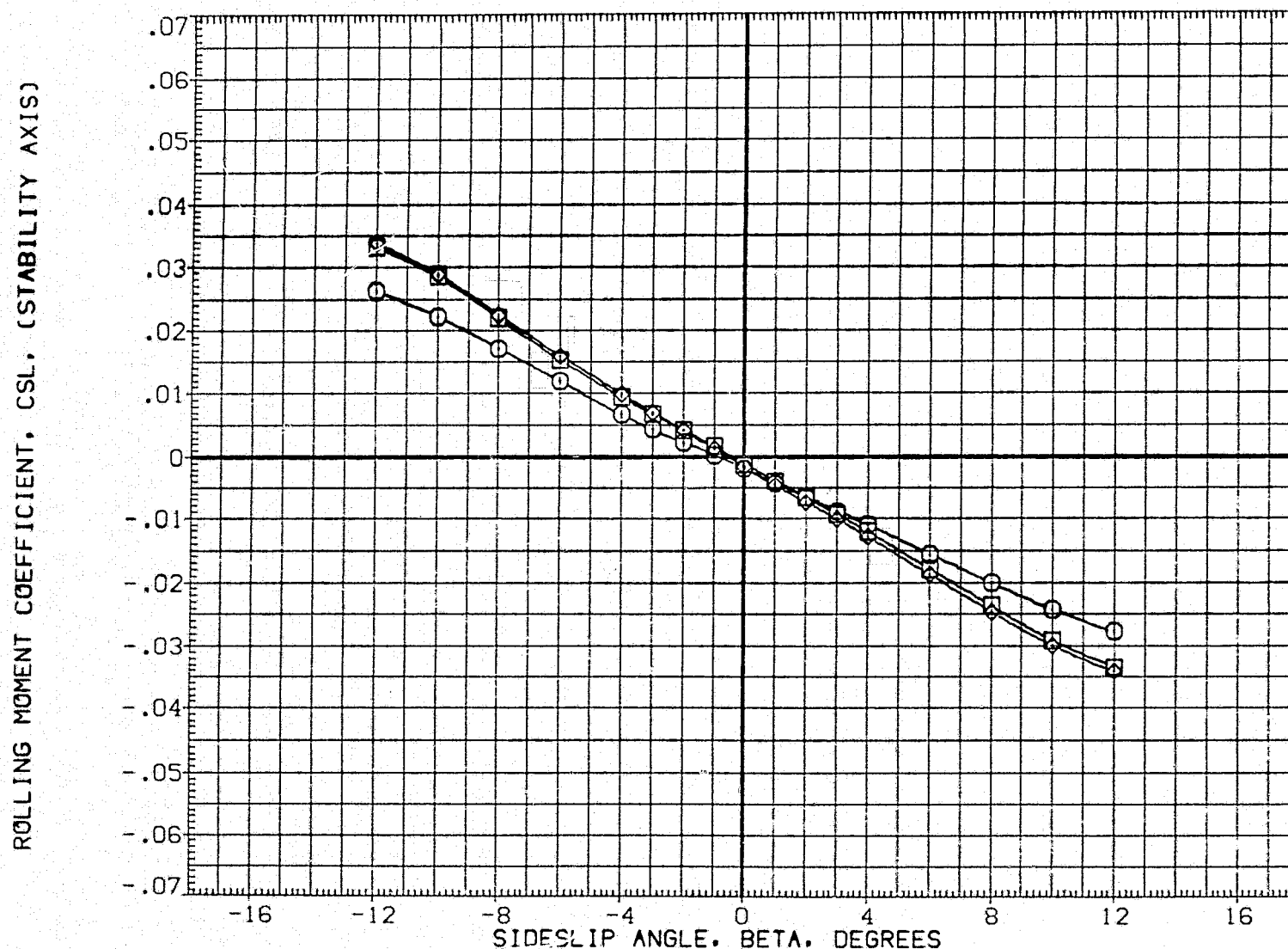


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
(A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM055)	BTWT-1431CA5 KI FO HIS.1A
(RGM041)	BTWT-1431CA5 KI FO HIS.1A V9.1
(RGM043)	BTWT-1431CA5 KI FO HIS.6 V9.1

ALPHA	STAB	SS-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRF	1339.9100	IN. XC
YMRF	.0000	IN. YC
ZMRF	190.7500	IN. ZC
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

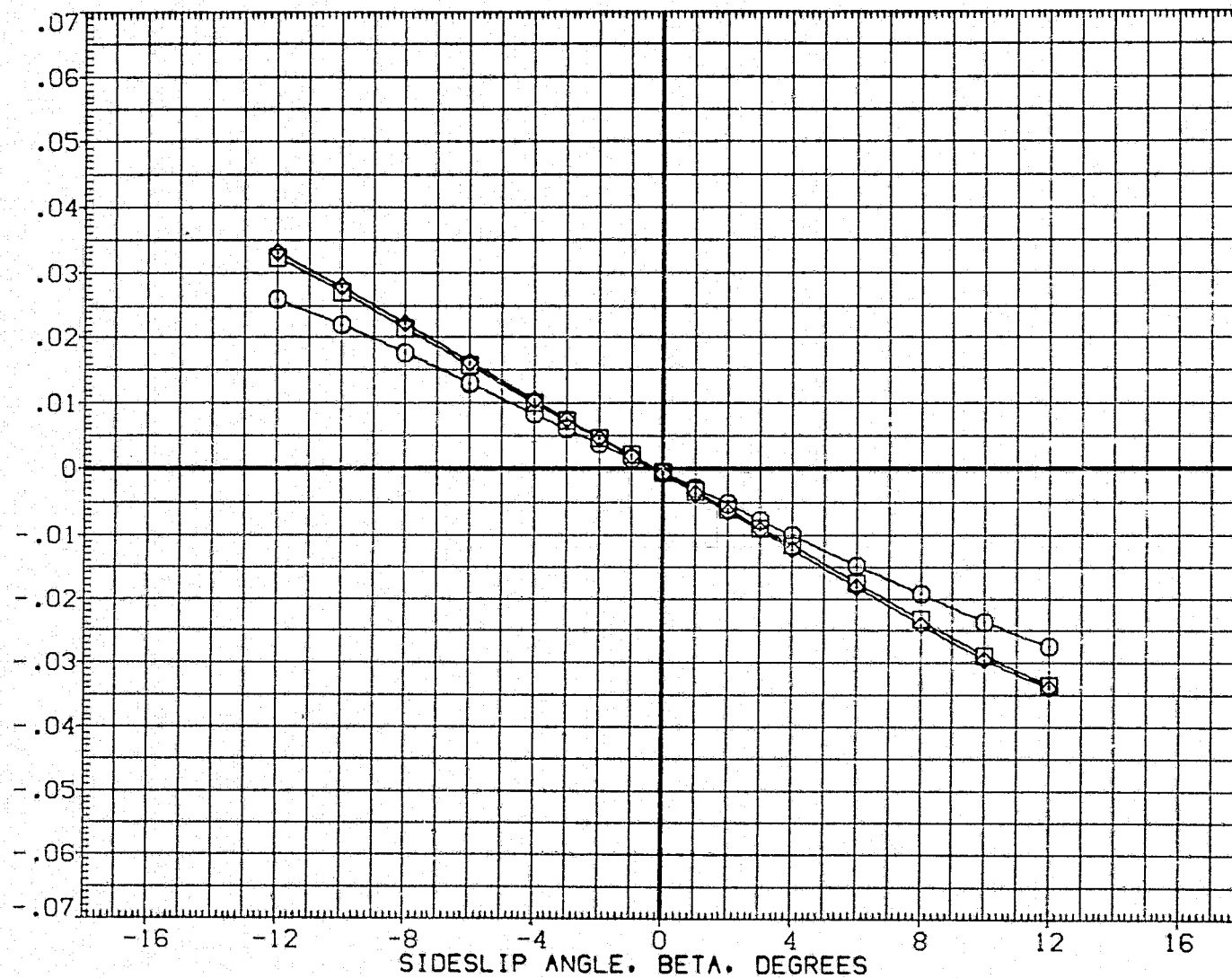


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMO55)	BTWT-1431CAS K1 FO HIS.1A
(RGMO41)	BTWT-1431CAS K1 FO HIS.1A V9.1
(RGMO43)	BTWT-1431CAS K1 FO HIS.6 V9.1

ALPHA	STAB	SS-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.8030	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

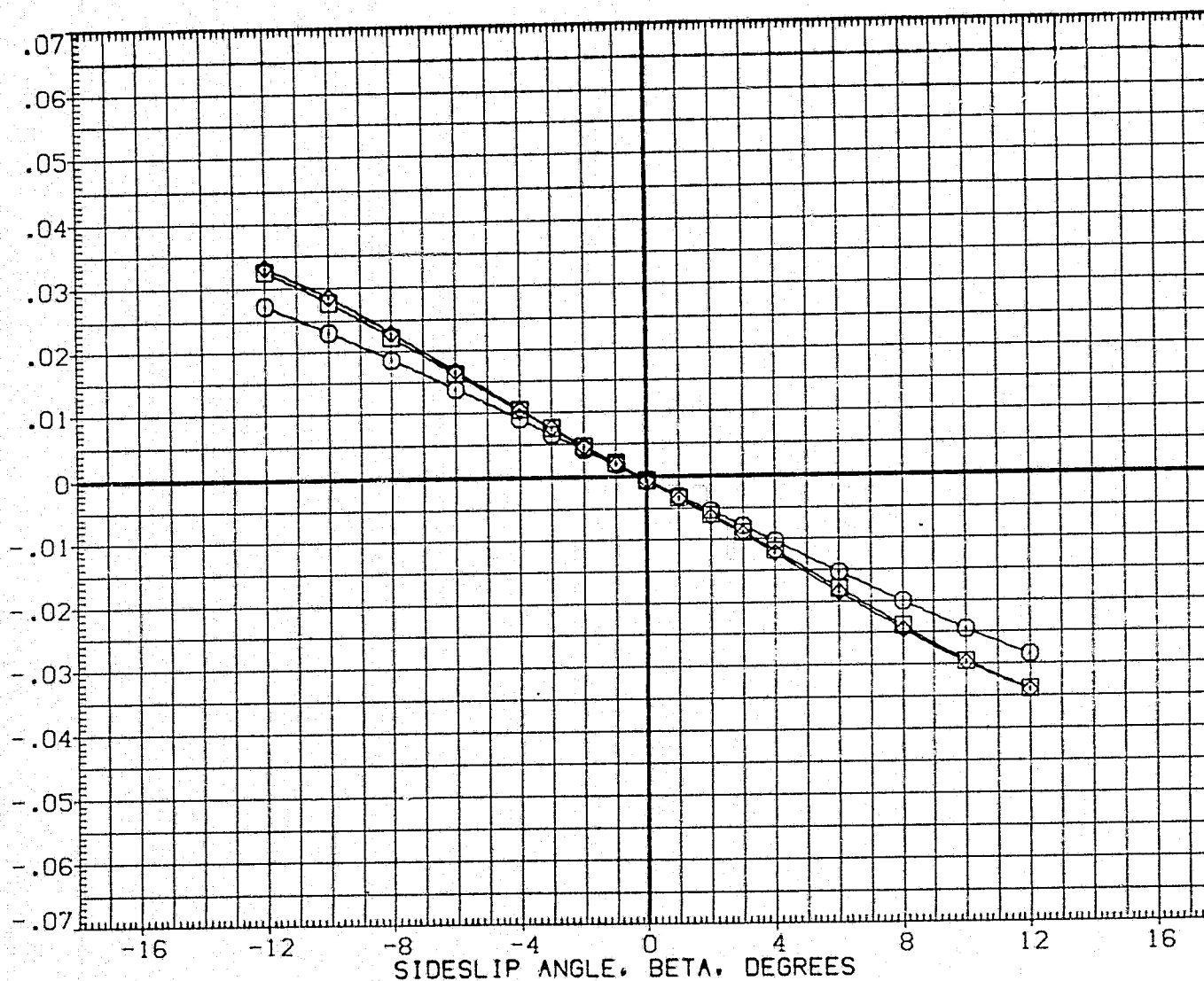
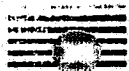


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
(C)MACH = .50





DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGMO55)	BTWT-1431CA5 KI FO H15.1A
(RGMO41)	BTWT-1431CA5 KI FO H15.1A V9.1
(RGMO13)	BTWT-1431CA5 KI FO H15.6 V9.1

ALPHA1	STAB	S5-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

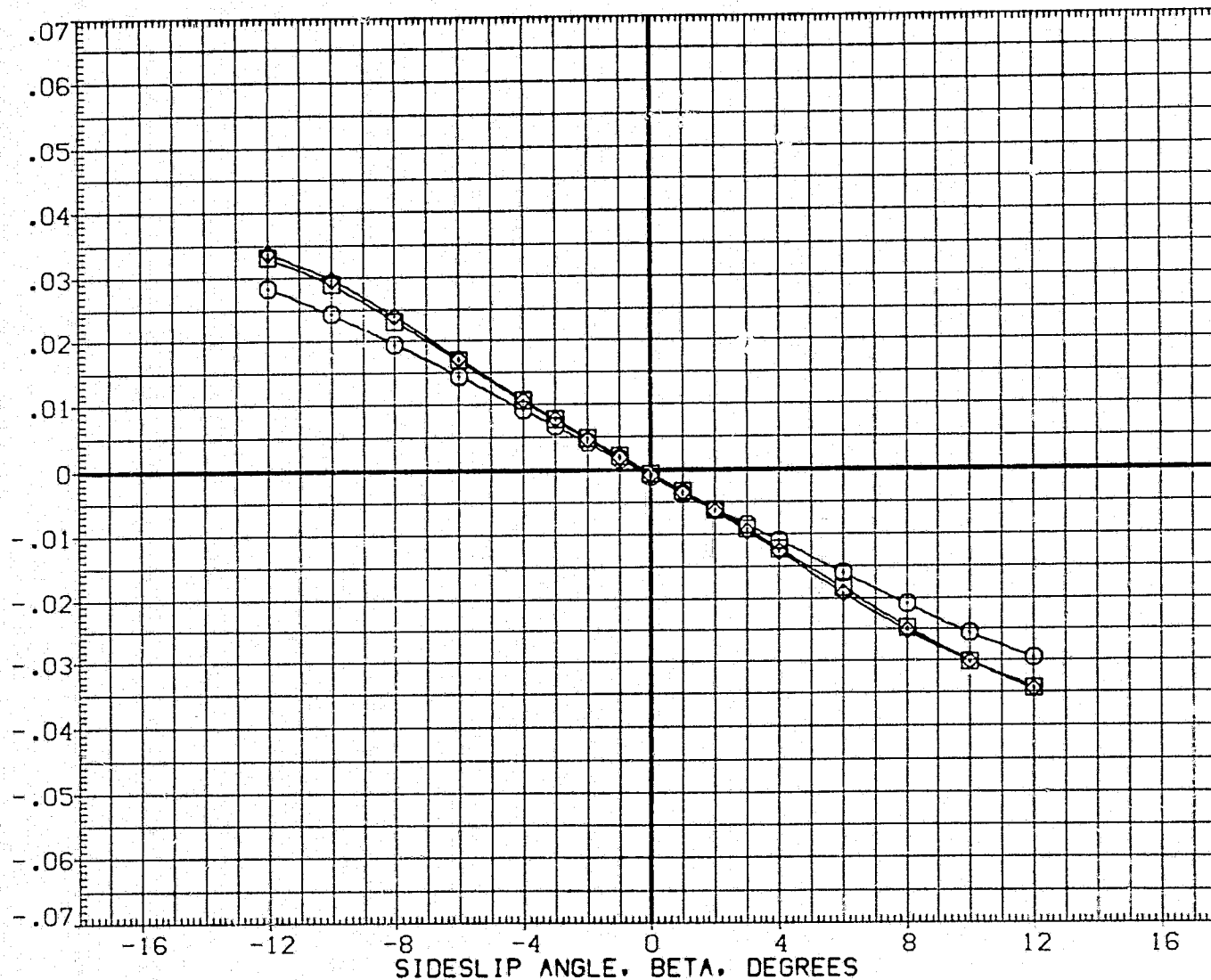


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP  
(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM055)	BTWT-1431CA5 K1 FO H15.1A
(RGM041)	BTWT-1431CA5 K1 FO H15.1A V9.1
(RGM043)	BTWT-1431CA5 K1 FO H15.6 V9.1

ALPHA1	STAB	S5-6
6.000	-1.900	.000
6.000	-2.000	.000
6.000	-2.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.3000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

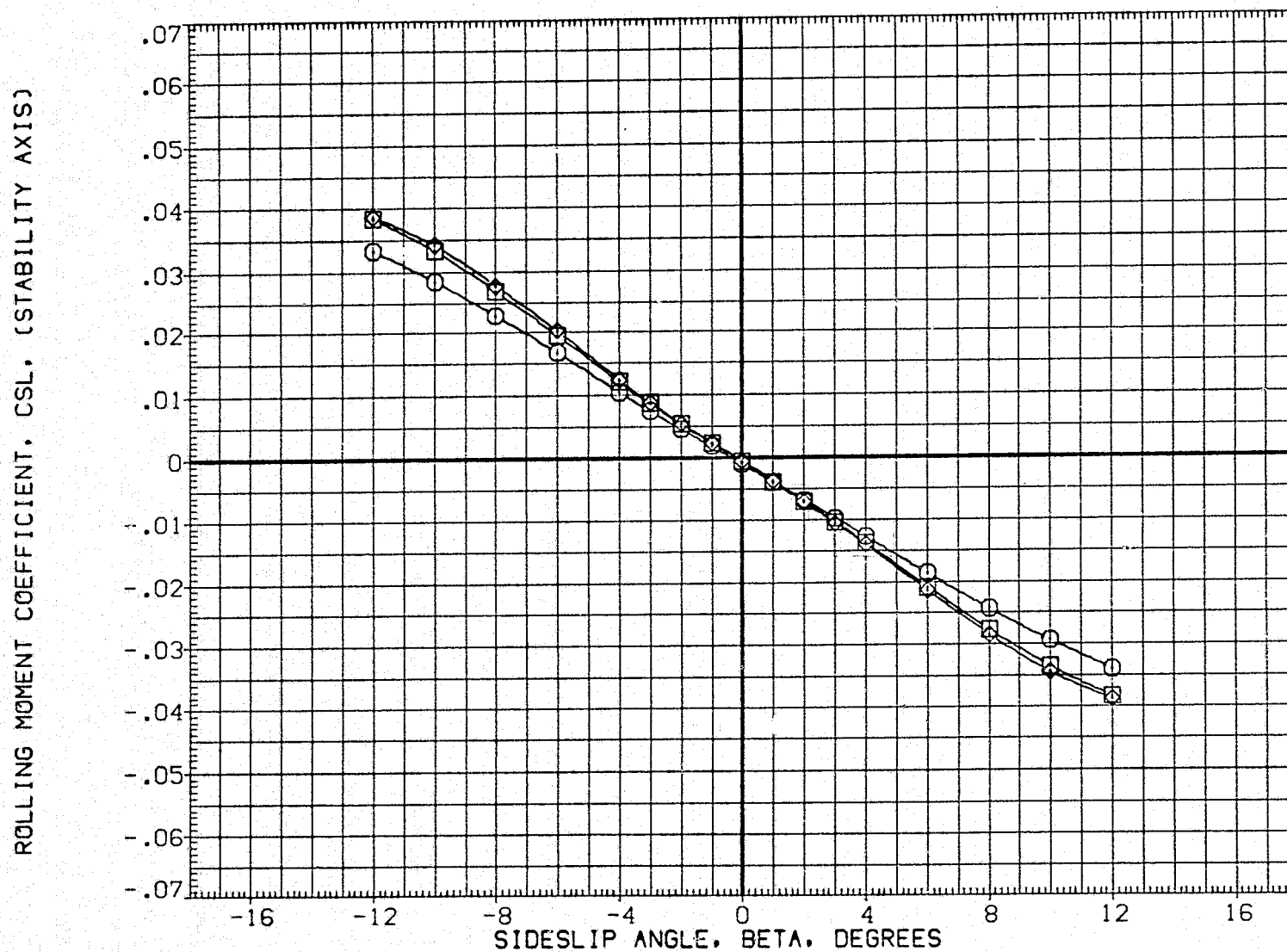


FIG. 244 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS UP

(E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGM105)	□ CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM110)	□ DATA NOT AVAILABLE	6.000	-3.200	.000	4.000	LREF	327.8000	IN.
(RGM114)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

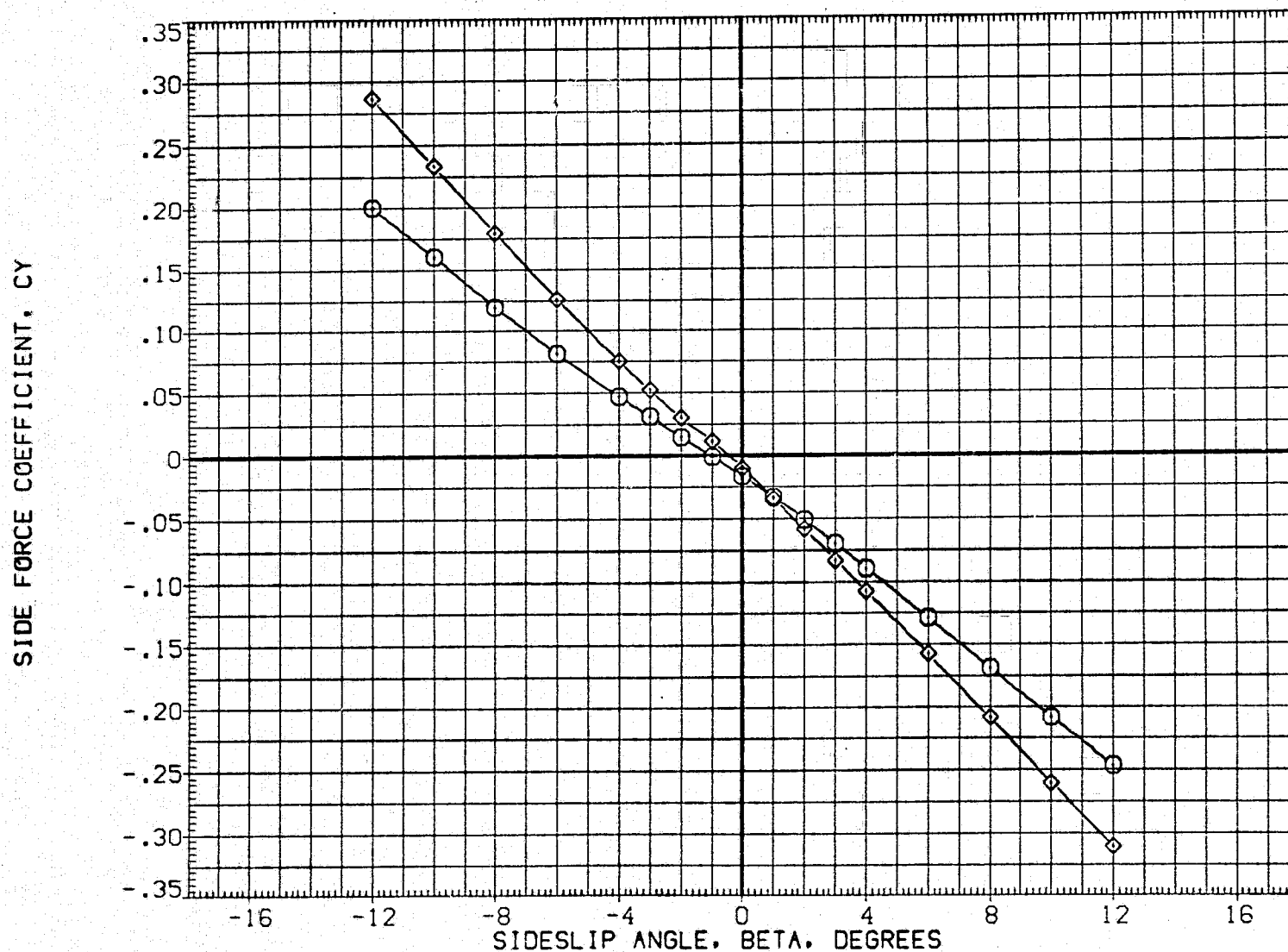


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGM105)	CAS KI FO H15.1A (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM110)	CAS KI FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	LREF	327.8000	IN.
(RGM114)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

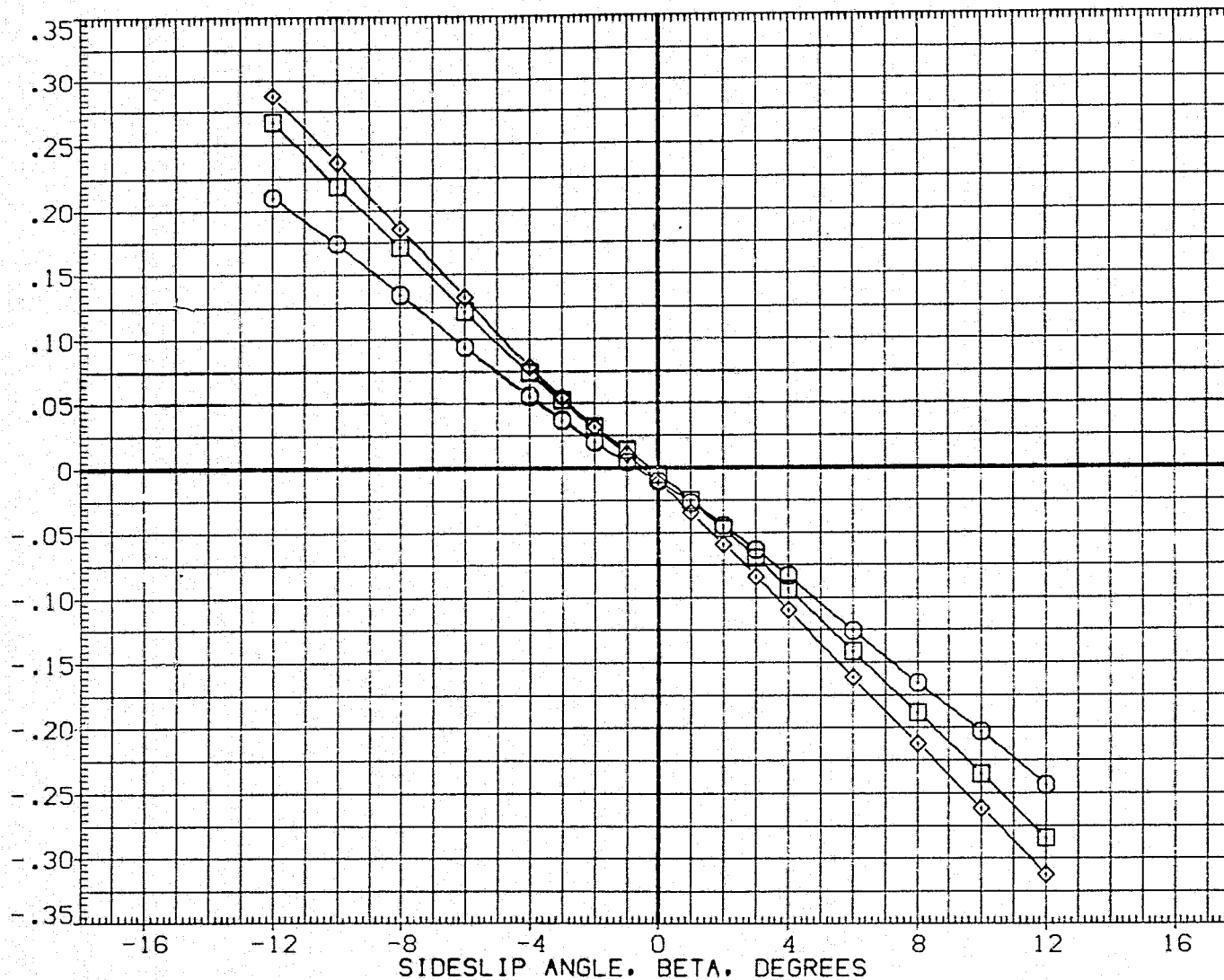


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY  
(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	S5-6	IORB	REFERENCE INFORMATION		
(RGM105)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM110)	CAS K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	LREF	327.8000	IN.
(RGM114)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

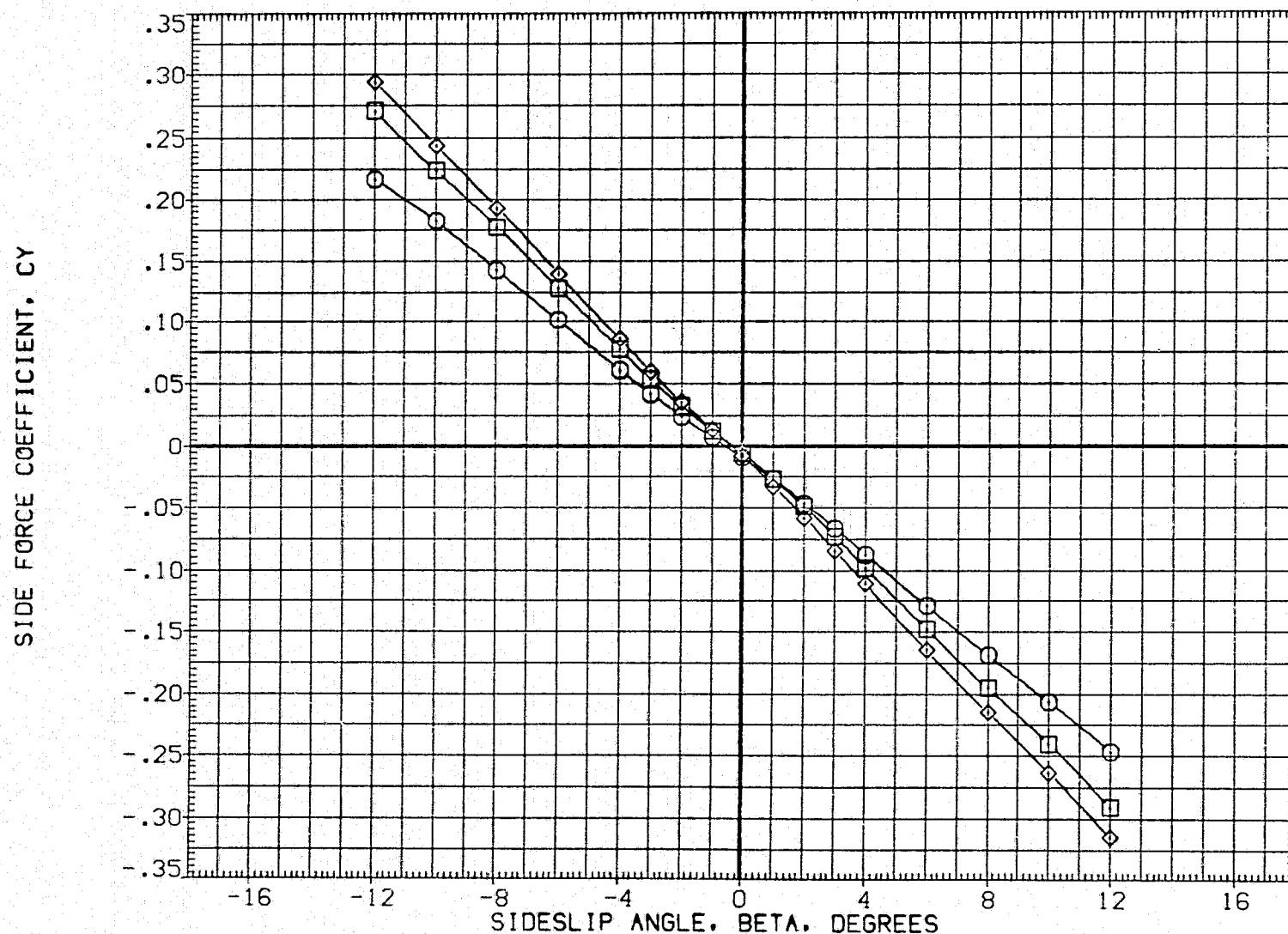


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	S5-6	IORB	REFERENCE INFORMATION		
(RGM105)	○ CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000	50. FT.
(RGM110)	□ CAS K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	LREF	327.8000	IN.
(RGM114)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

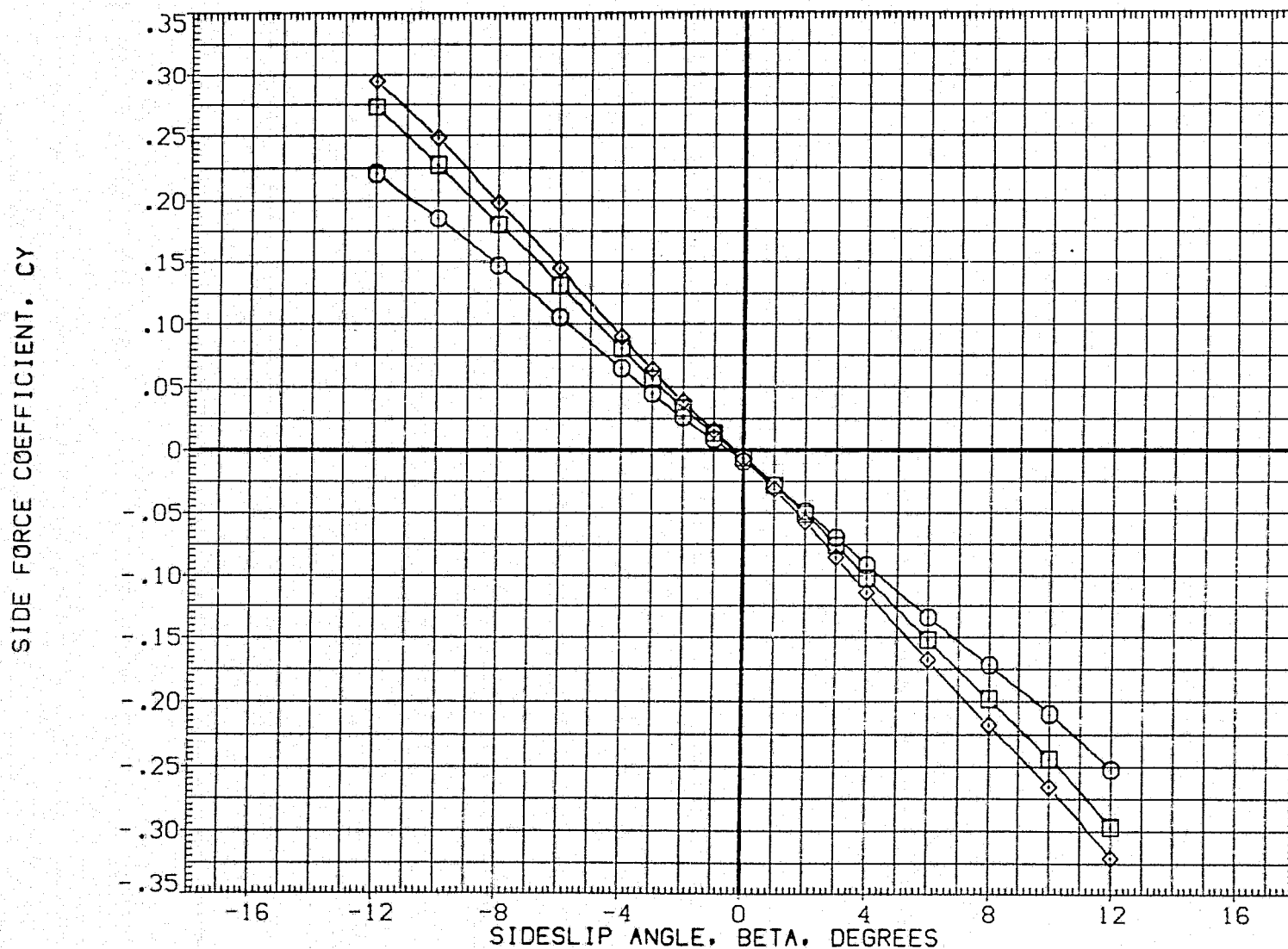


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	IORB	REFERENCE INFORMATION		
(RGM105)	CA5 KI FO H15.1A (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM110)	CA5 KI FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	LREF	327.8000	IN.
(RGM114)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

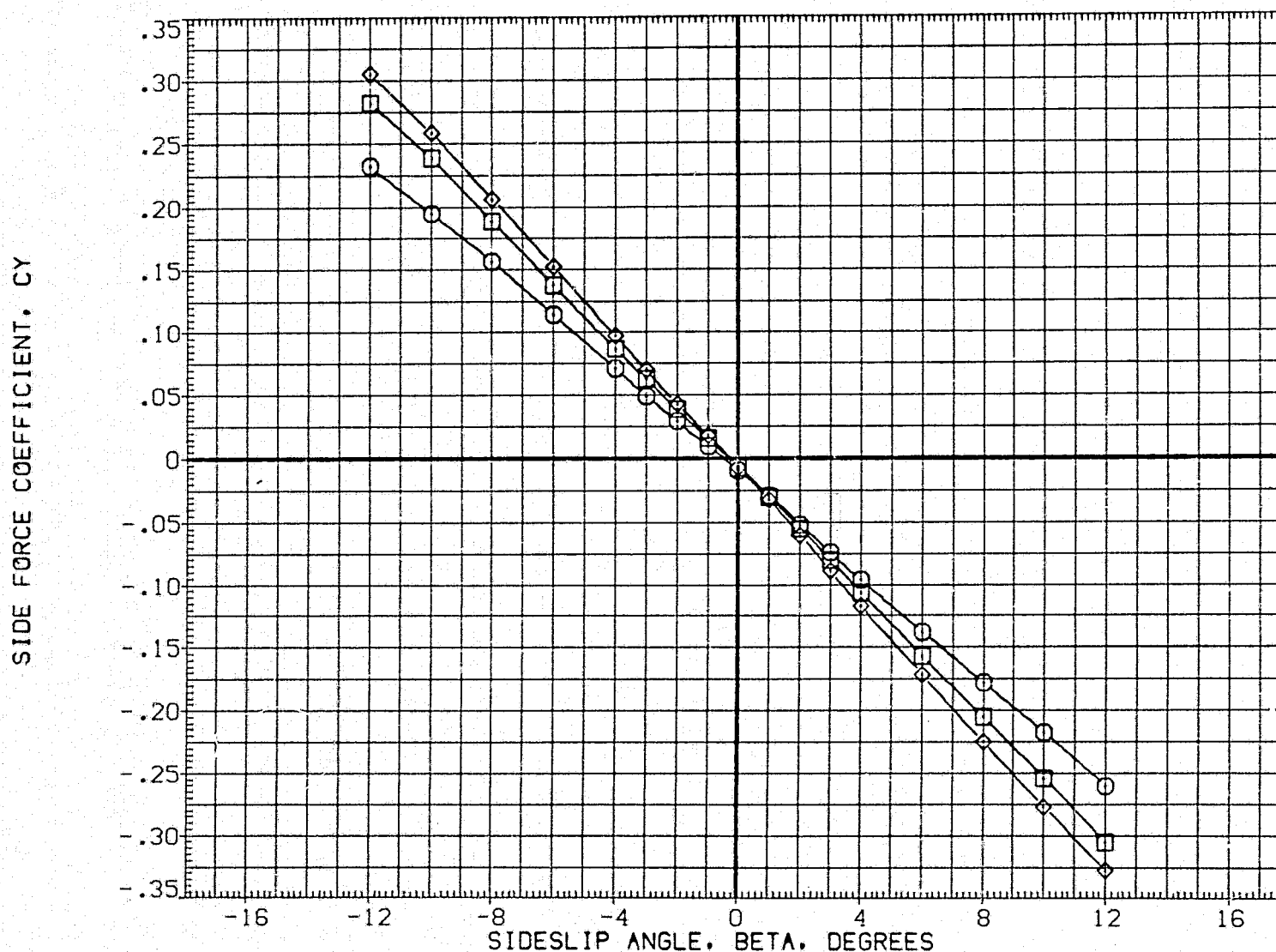


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	ICRB	REFERENCE INFORMATION		
(RGM105)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3)	6.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM110)	DATA NOT AVAILABLE	6.000	-3.200	.000	4.000	LREF	327.8000	IN.
(RGM114)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	6.000	-3.200	.000	4.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

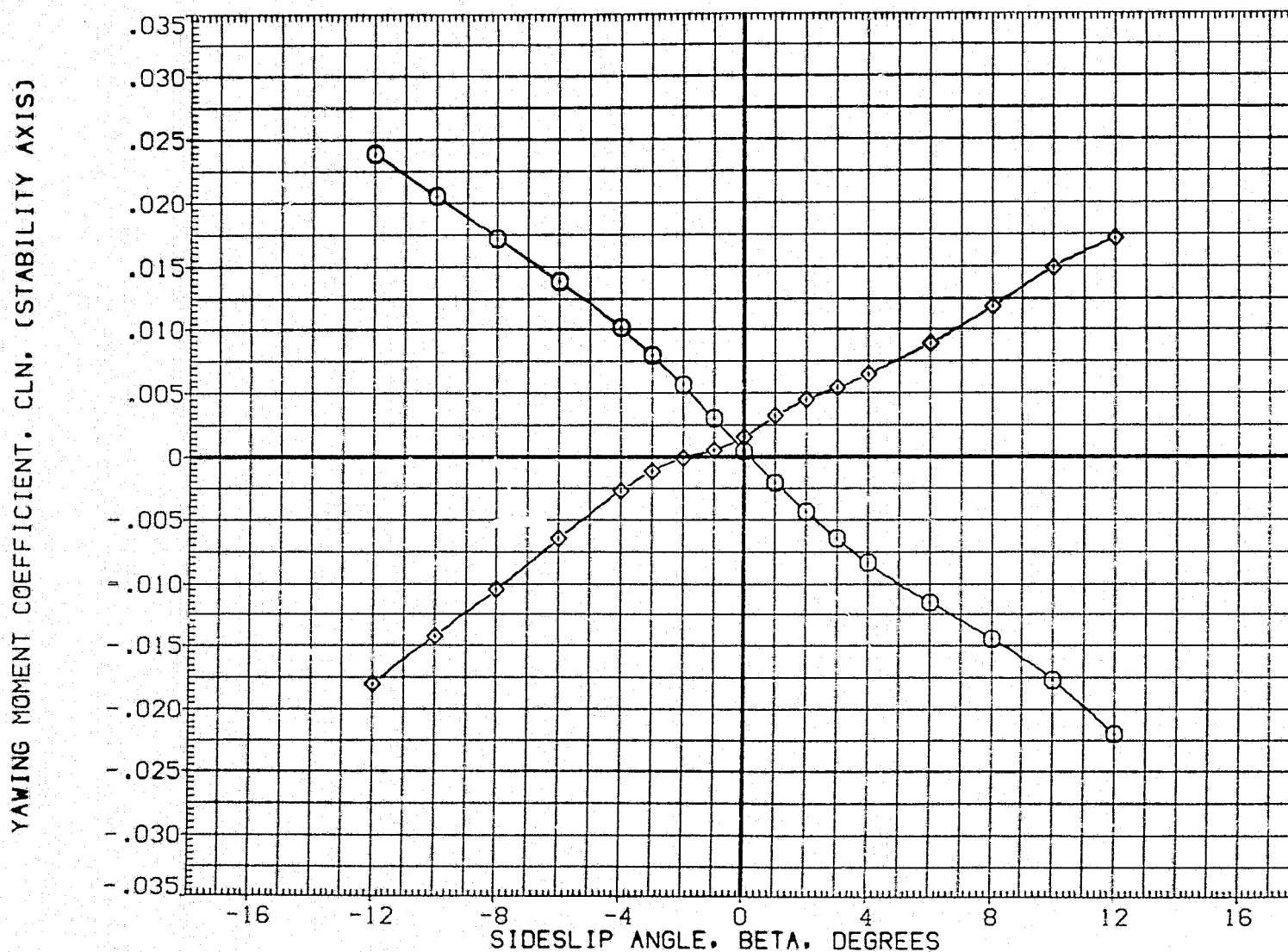


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(A)MACH = .15



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	10RB	REFERENCE INFORMATION
(RGM105)	□ CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT.
(RGM110)	◇ CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	LREF 327.8000 IN.
(RGM114)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

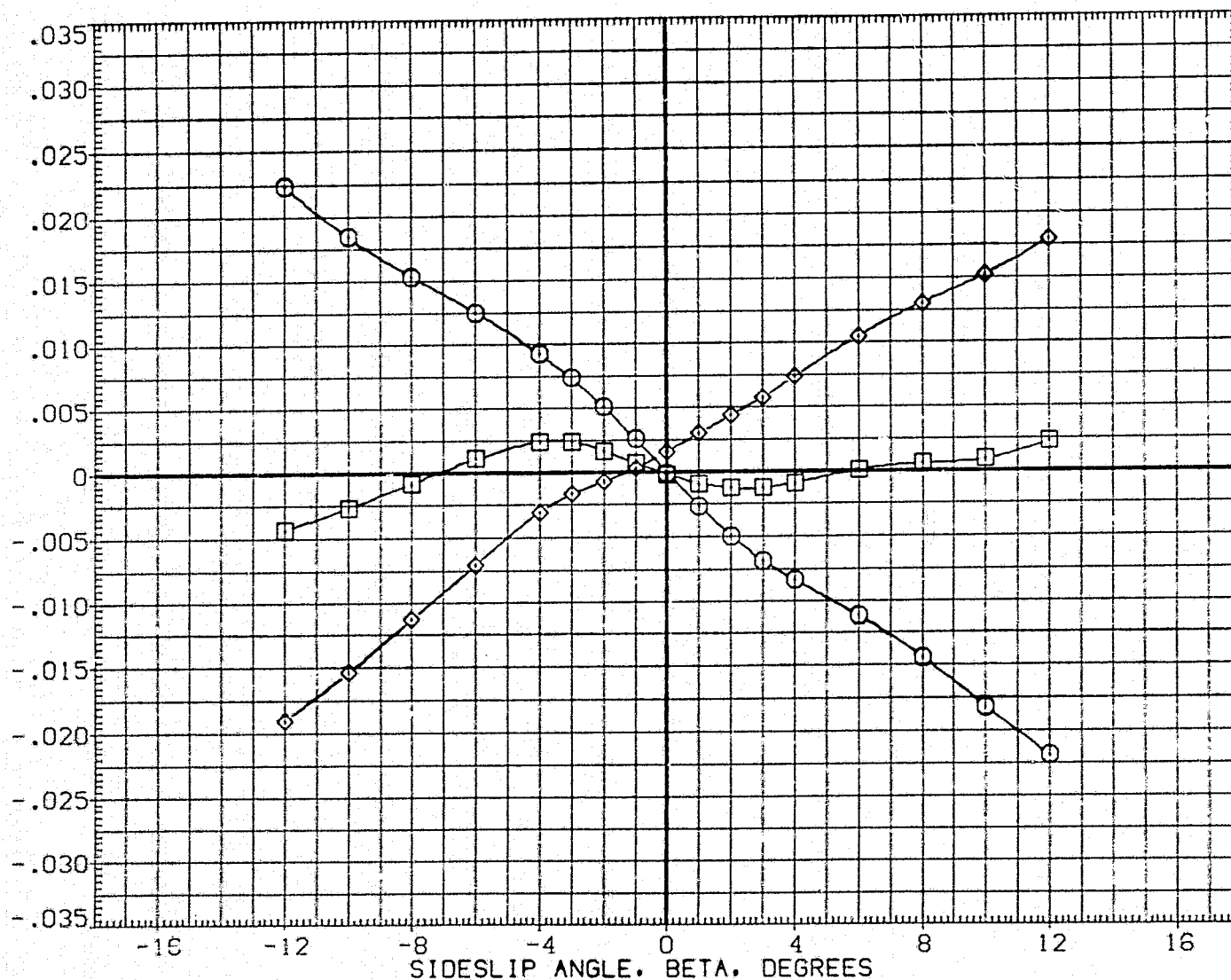


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY  
(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA I	STAB	S5-6	IORB	REFERENCE INFORMATION		
(RGM105)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM110)	CAS K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	LREF	327.8000	IN.
(RGM114)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

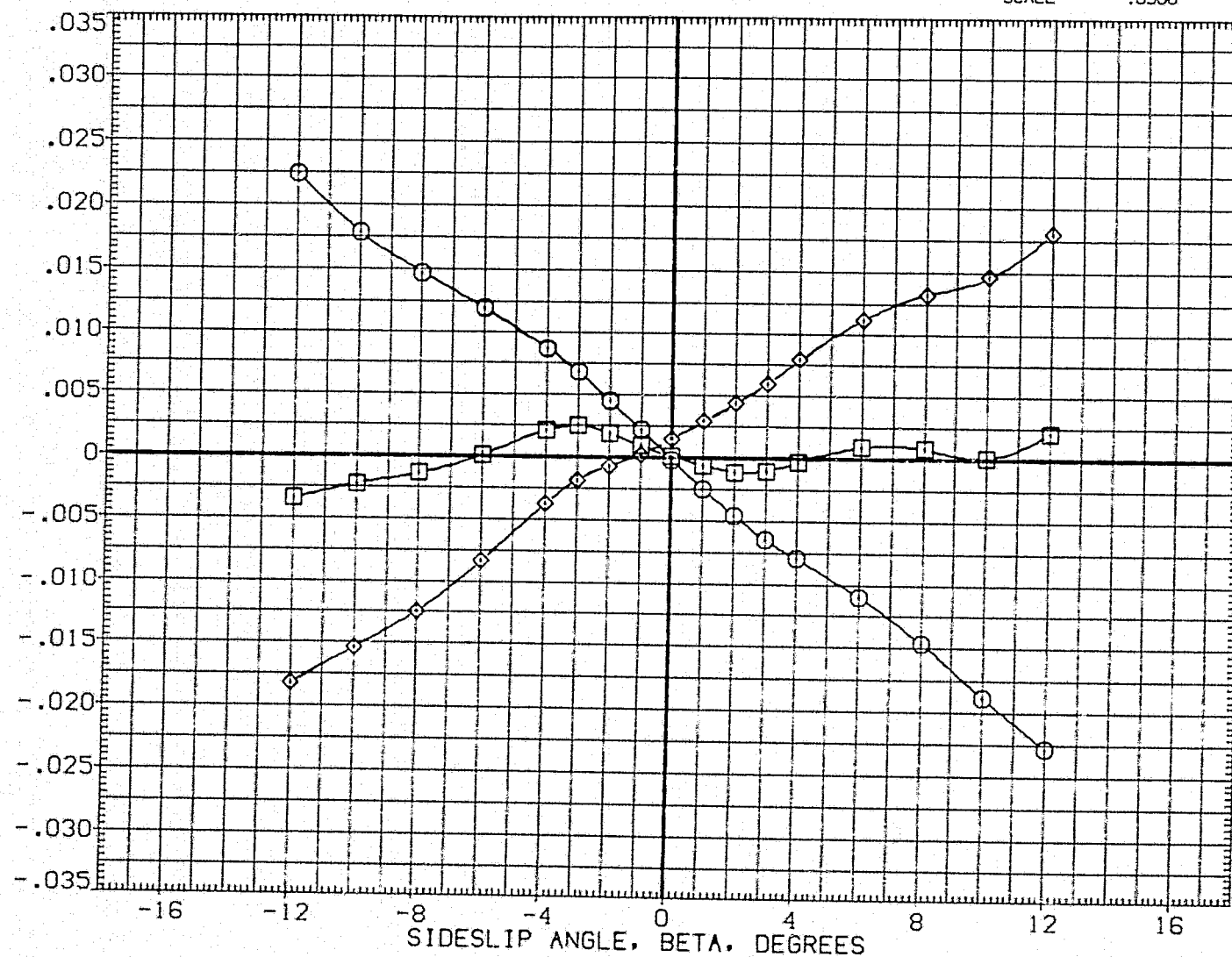


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY  
(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	IORB	REFERENCE INFORMATION	
(RGM105)	CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000 SQ.FT.
(RGM110)	CAS K1 FO H15.1A V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	LREF	327.8000 IN.
(RGM114)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

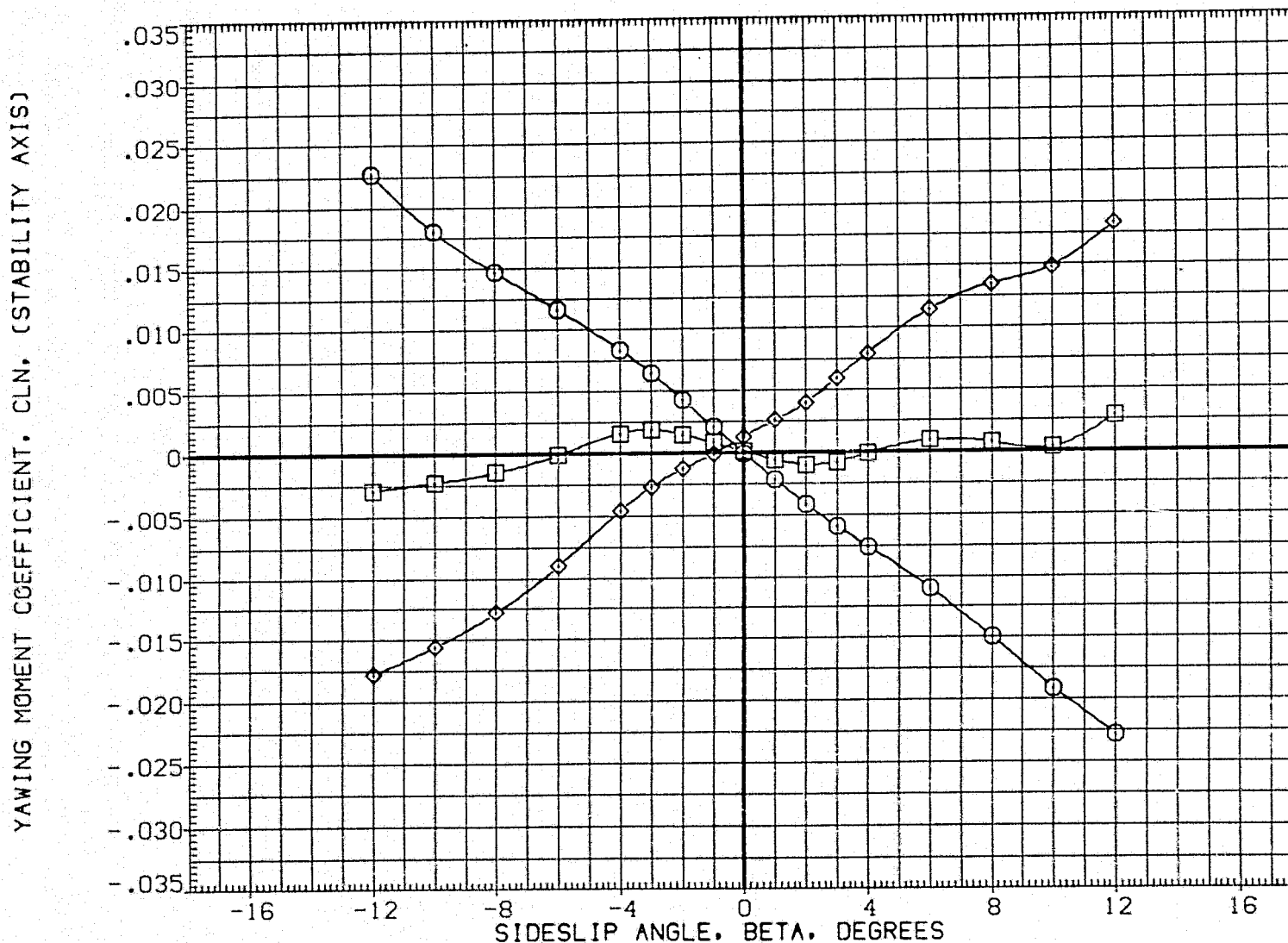


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGM105)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.3)	6.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM110)	CA5 K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3)	6.000	-3.200	.000	4.000	LREF	327.8000	IN.
(RGM114)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	6.000	-3.200	.000	4.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

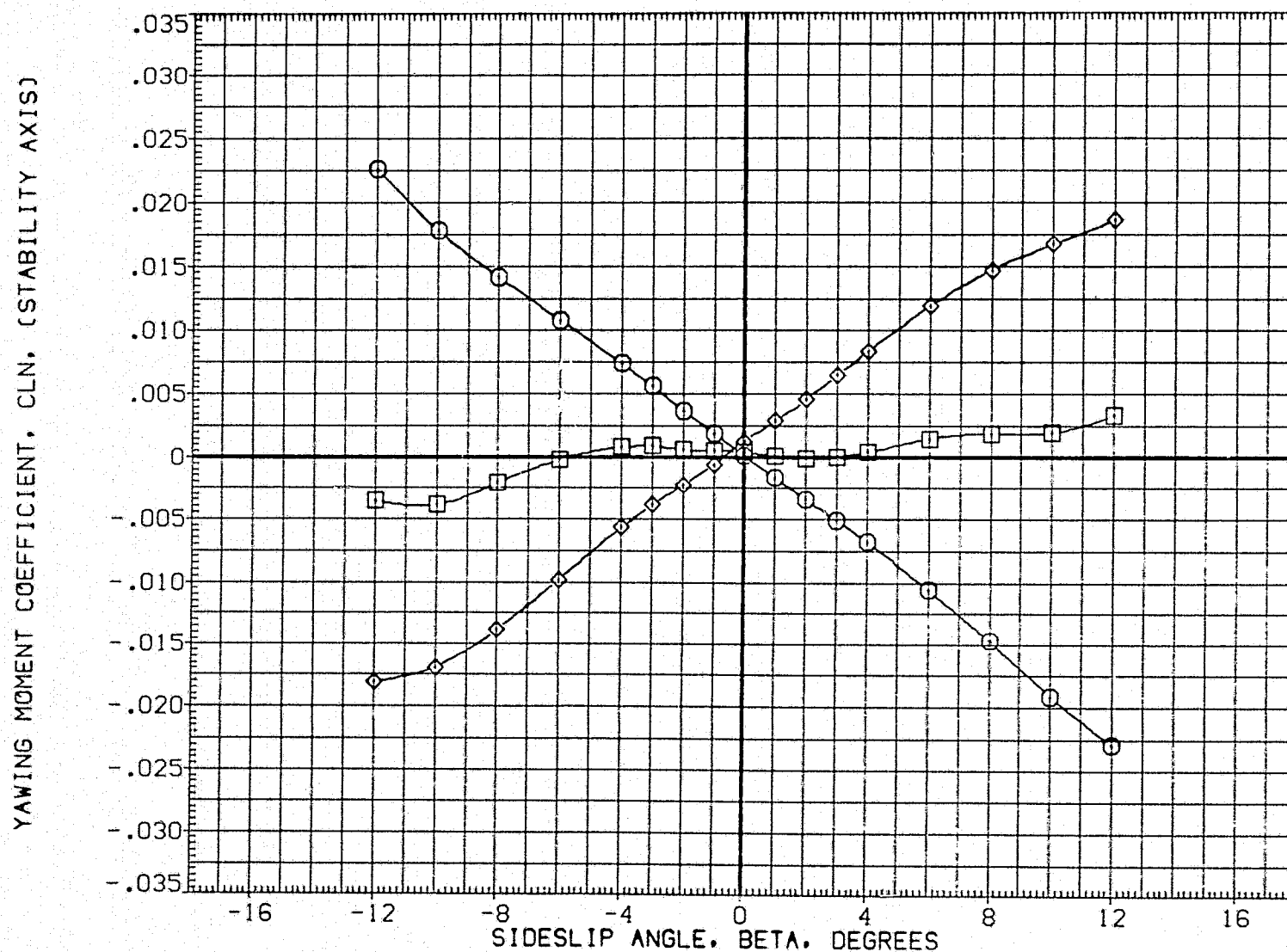


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY  
(E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	10RB	REFERENCE INFORMATION	
(RGM105)	CA5 KI FO H15.1A (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000 SQ.FT.
(RGM110)	DATA NOT AVAILABLE	6.000	-3.200	.000	4.000	LREF	327.8000 IN.
(RGM114)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

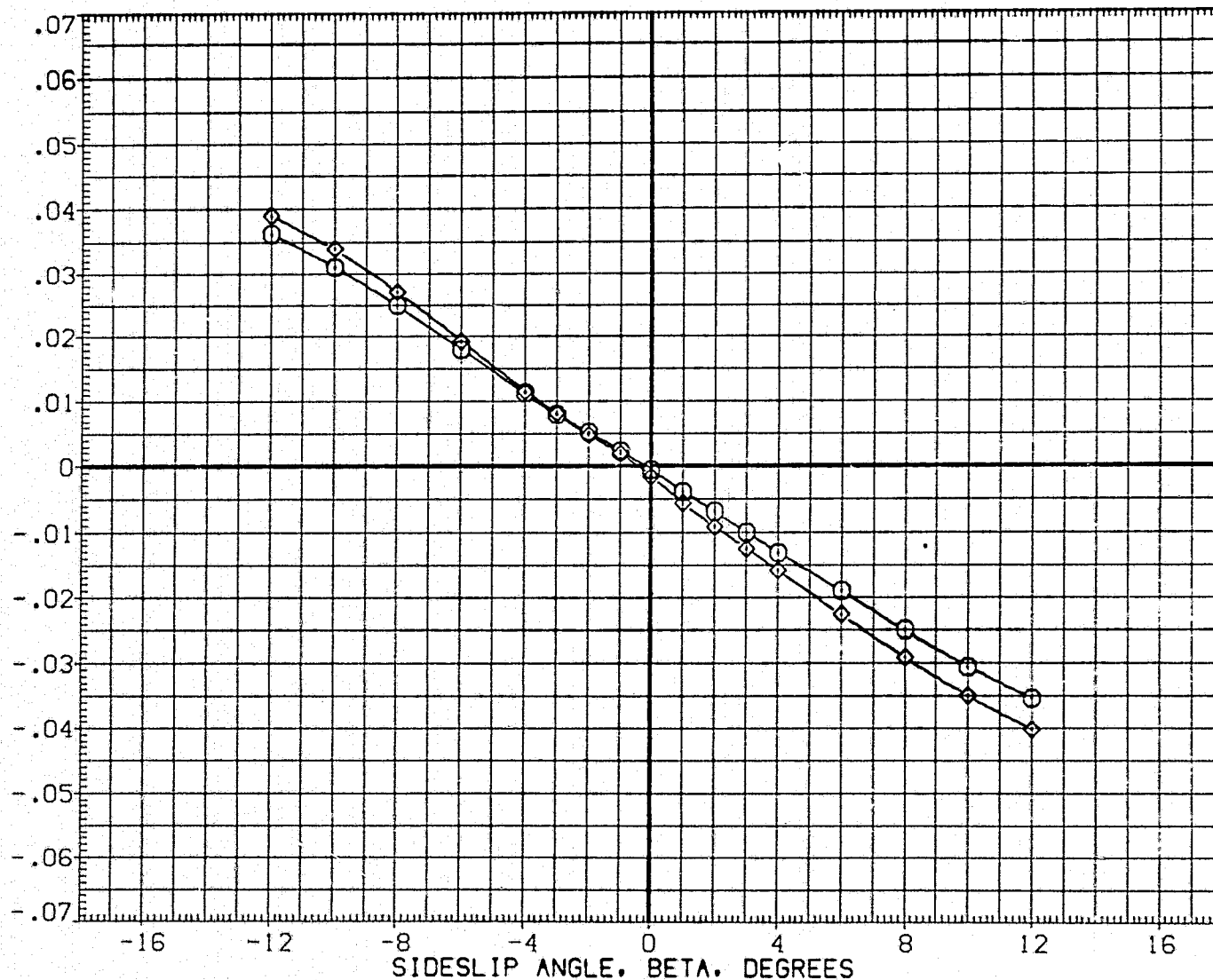


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY  
(A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION
(RGM105)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.3)	6.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT.
(RGM110)	CA5 K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3)	6.000	-3.200	.000	4.000	LREF 327.8000 IN.
(RGM114)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	6.000	-3.200	.000	4.000	BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

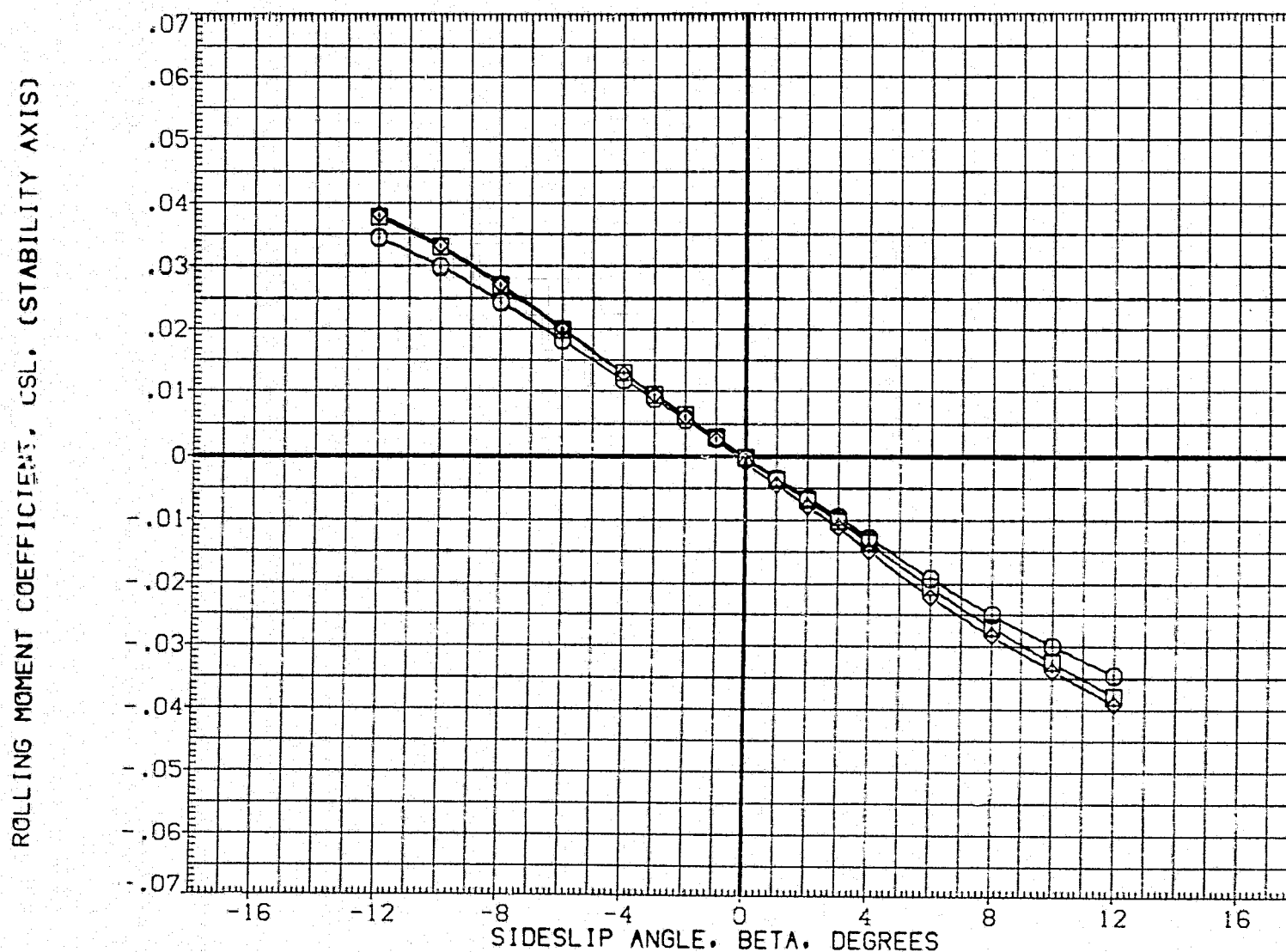


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY  
(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGM105)	CA5 KI FO H15.1A (PLUS. ORB TCS AT38.3)	6.000	-2.000	.000	4.000	SREF	5500.0000	50. FT.
(RGM110)	CA5 KI FO H15.1A V9.1 (PLUS. ORB TCS AT38.3)	6.000	-3.200	.000	4.000	LREF	327.8000	IN.
(RGM114)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	6.000	-3.200	.000	4.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

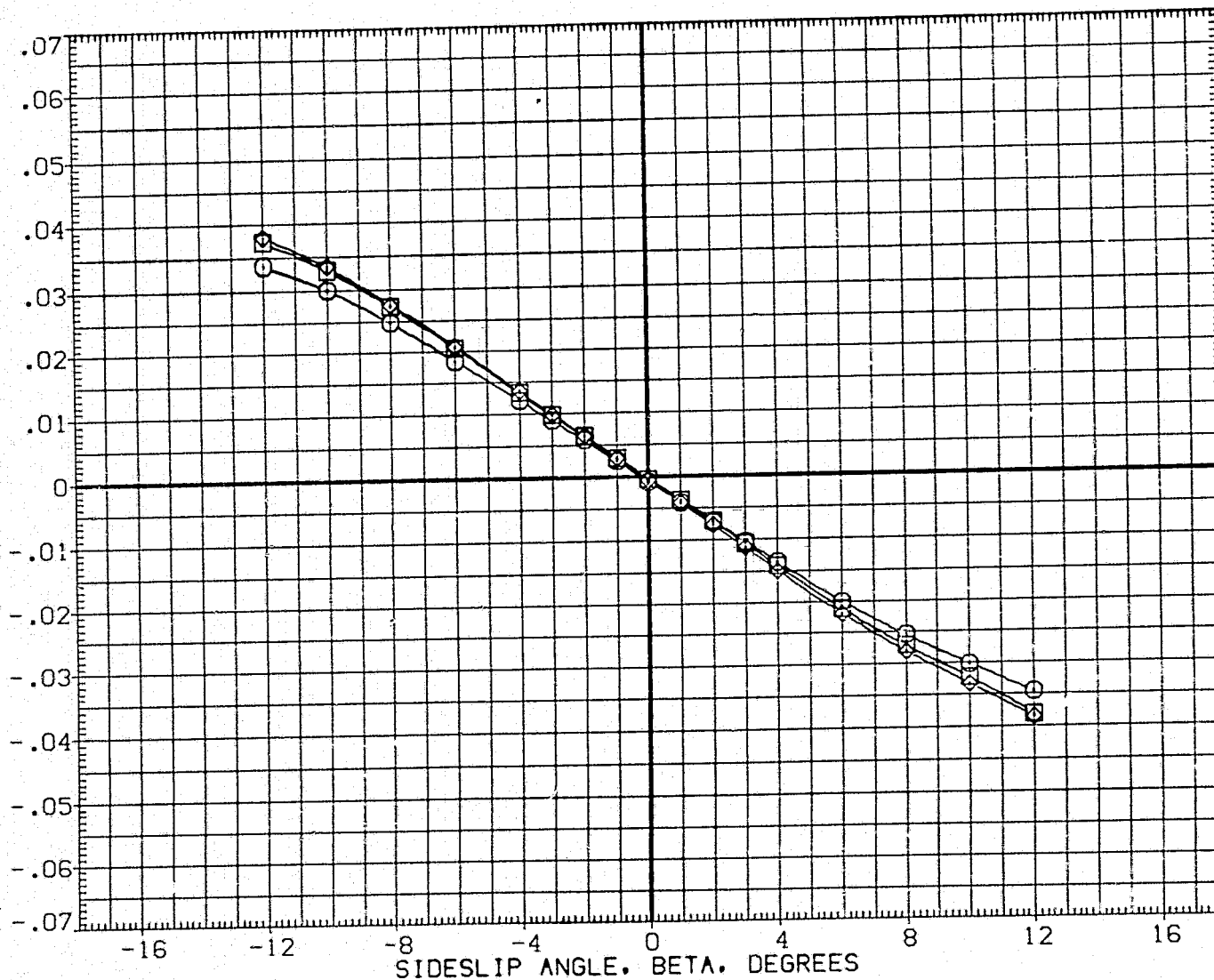


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY  
(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	10RB	REFERENCE INFORMATION
(RGM105)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT.
(RGM110)	CA5 K1 FO H15.1A V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	LREF 327.8000 IN.
(RGM114)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL (STABILITY AXIS)

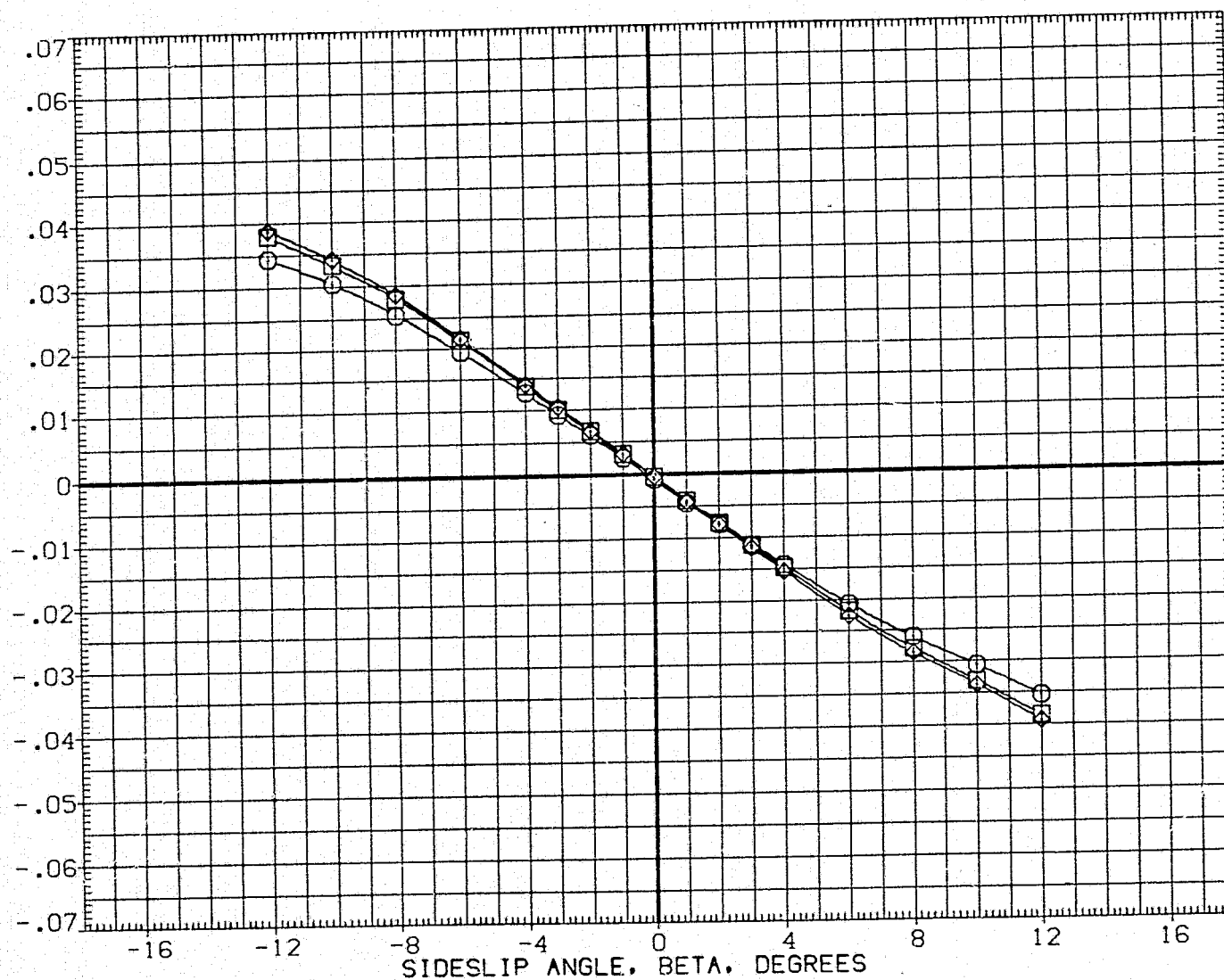


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY  
(D)MACH = .60



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM105)	○	CAS	K1	FO	H15.1A	(PLUS. ORB TC5 AT38.3 )
(RGM110)	□	CAS	K1	FO	H15.1A V9.1	(PLUS. ORB TC5 AT38.3 )
(RGM114)	◇	CAS	K1	FO	H15.6 V9.1	(PLUS. ORB TC5 AT38.3 )

ALPHA

STAB

S5-6

10RB

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

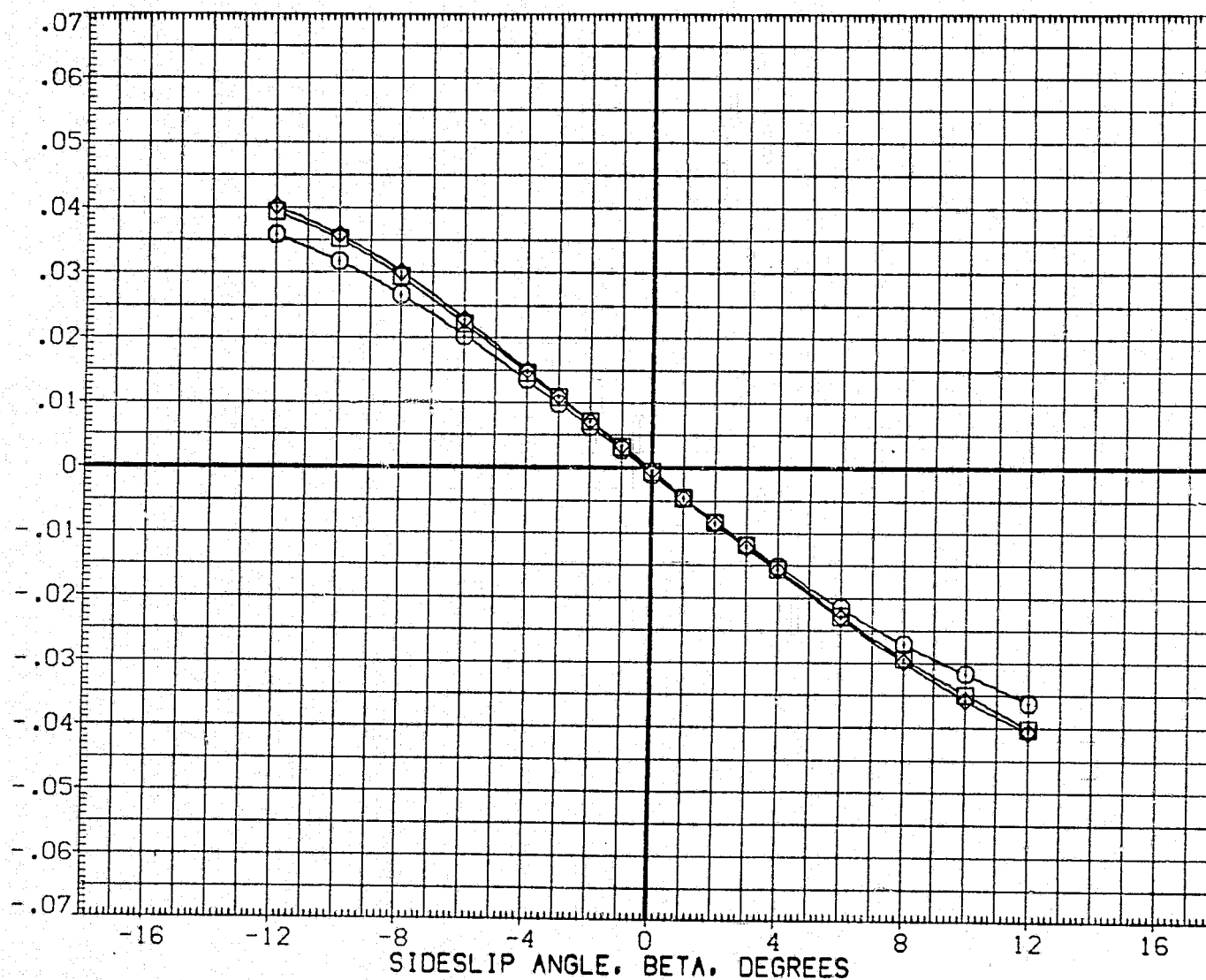


FIG. 245 747+ORB(4 DEG), EFFECT OF HORIZ TIP FINS, FLAPS UP FERRY

(E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM056)	BTWT-1431CA5 K1 F20 H15.1A
(RGM057)	BTWT-1431CA5 K1 F20 H15.1A V9.1
(RGM060)	BTWT-1431CA5 K1 F20 H15.6 V9.1

ALPHA	STAB	S5-6
6.000	1.000	.000
6.000	1.000	.000
6.000	1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

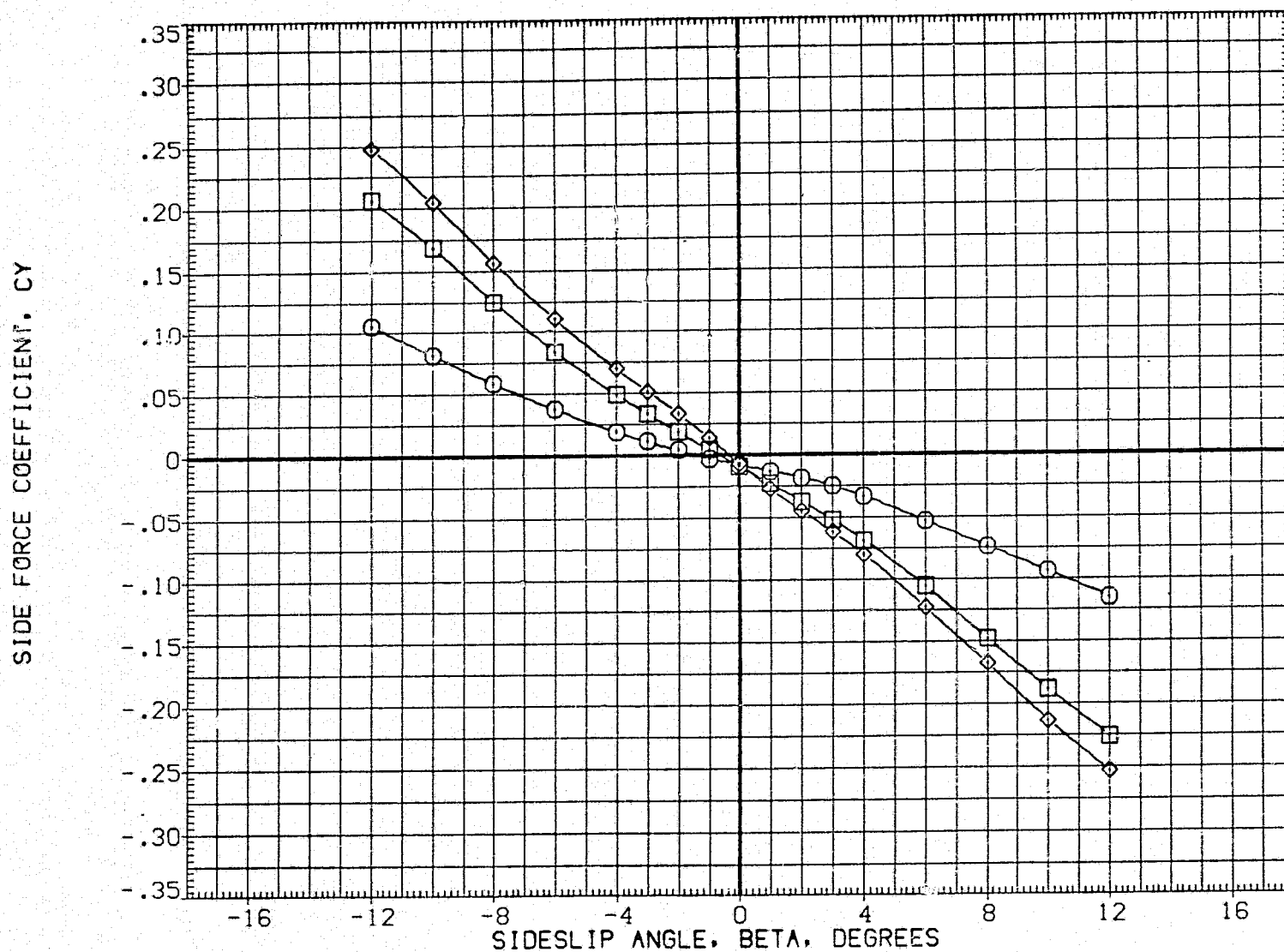


FIG. 246 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20  
(A) MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM056)	BTWT-1431CA5 K1 F20 H15.1A
(RGM057)	BTWT-1431CA5 K1 F20 H15.1A V9.1
(RGM060)	BTWT-1431CA5 K1 F20 H15.6 V9.1

ALPHA	STAB	SS-6
6.000	1.000	.000
6.000	1.000	.000
6.000	1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

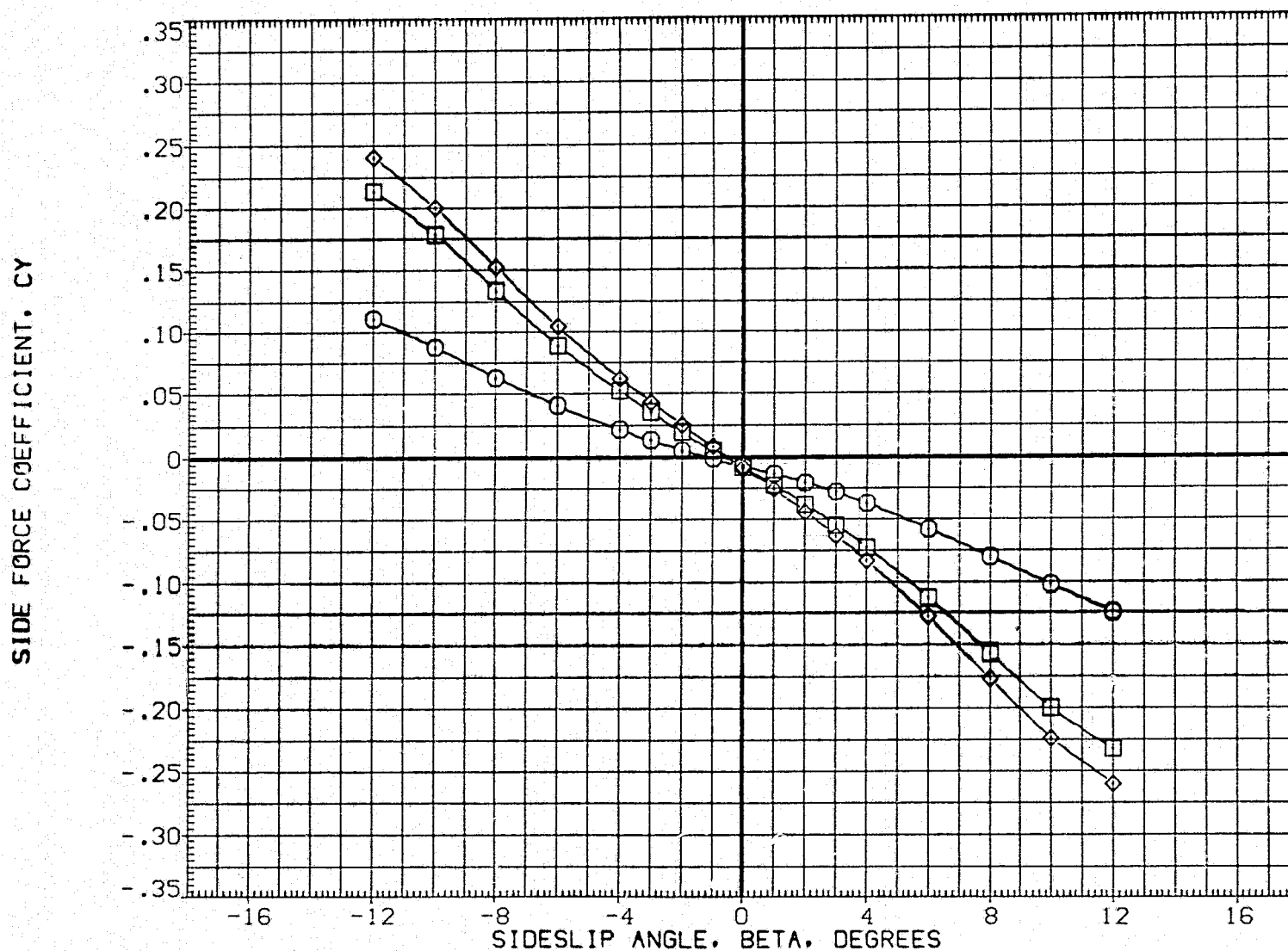


FIG. 246 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM056)	BTWT-1431CA5 K1 F20 H15.1A
(RGM057)	BTWT-1431CA5 K1 F20 H15.1A V9.1
(RGM060)	BTWT-1431CA5 K1 F20 H15.6 V9.1

ALPHA	STAB	SS-6
6.000	1.000	.000
6.000	1.000	.000
6.000	1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

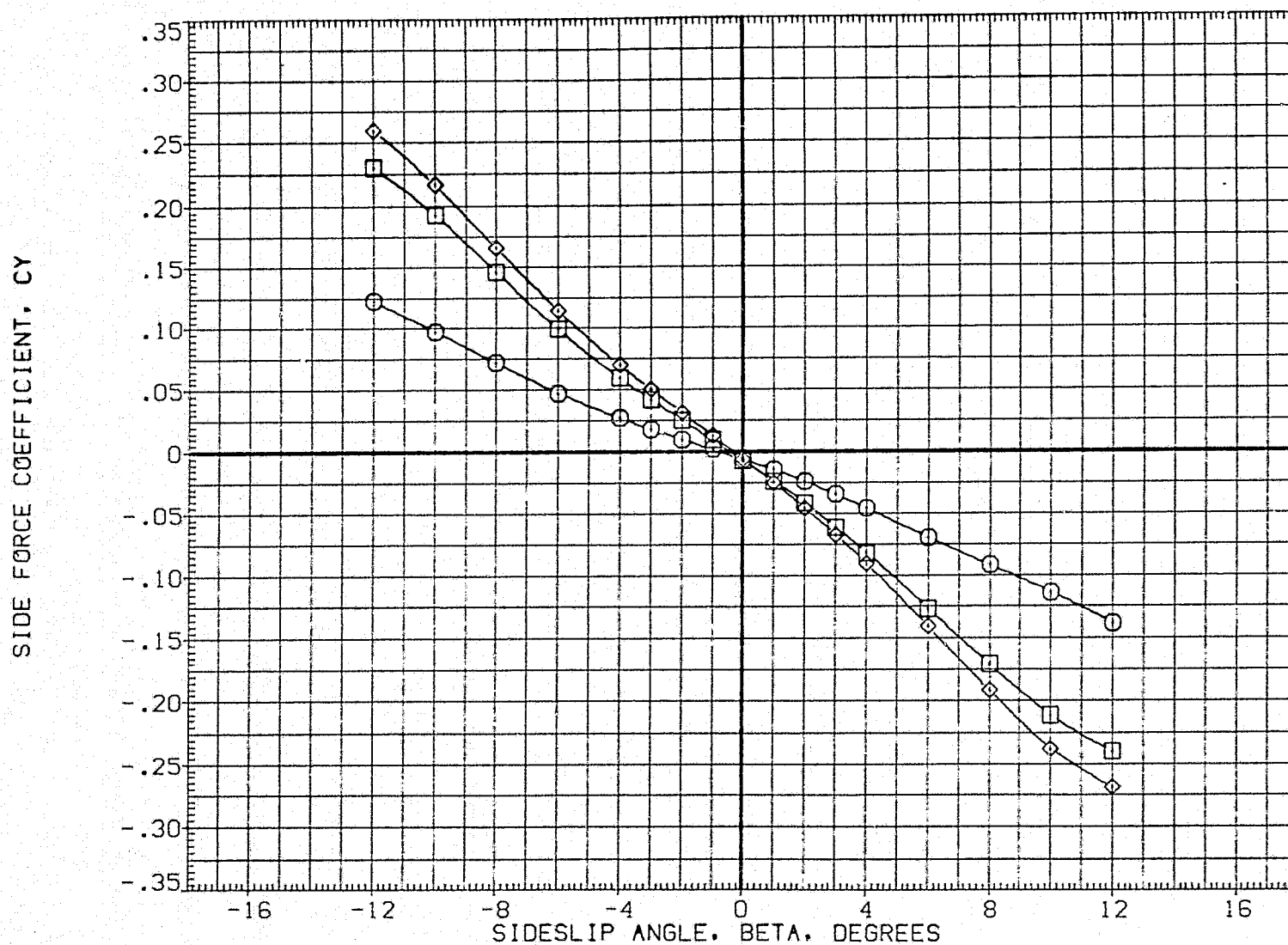


FIG. 246 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20  
(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM056)	BTWT-1431CA5 K1 F20 H15.1A
(RGM057)	BTWT-1431CA5 K1 F20 H15.1A V9.1
(RGM060)	BTWT-1431CA5 K1 F20 H15.6 V9.1

ALPHA1	STAB	S5-6
6.000	1.000	.000
6.000	1.000	.000
6.000	1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

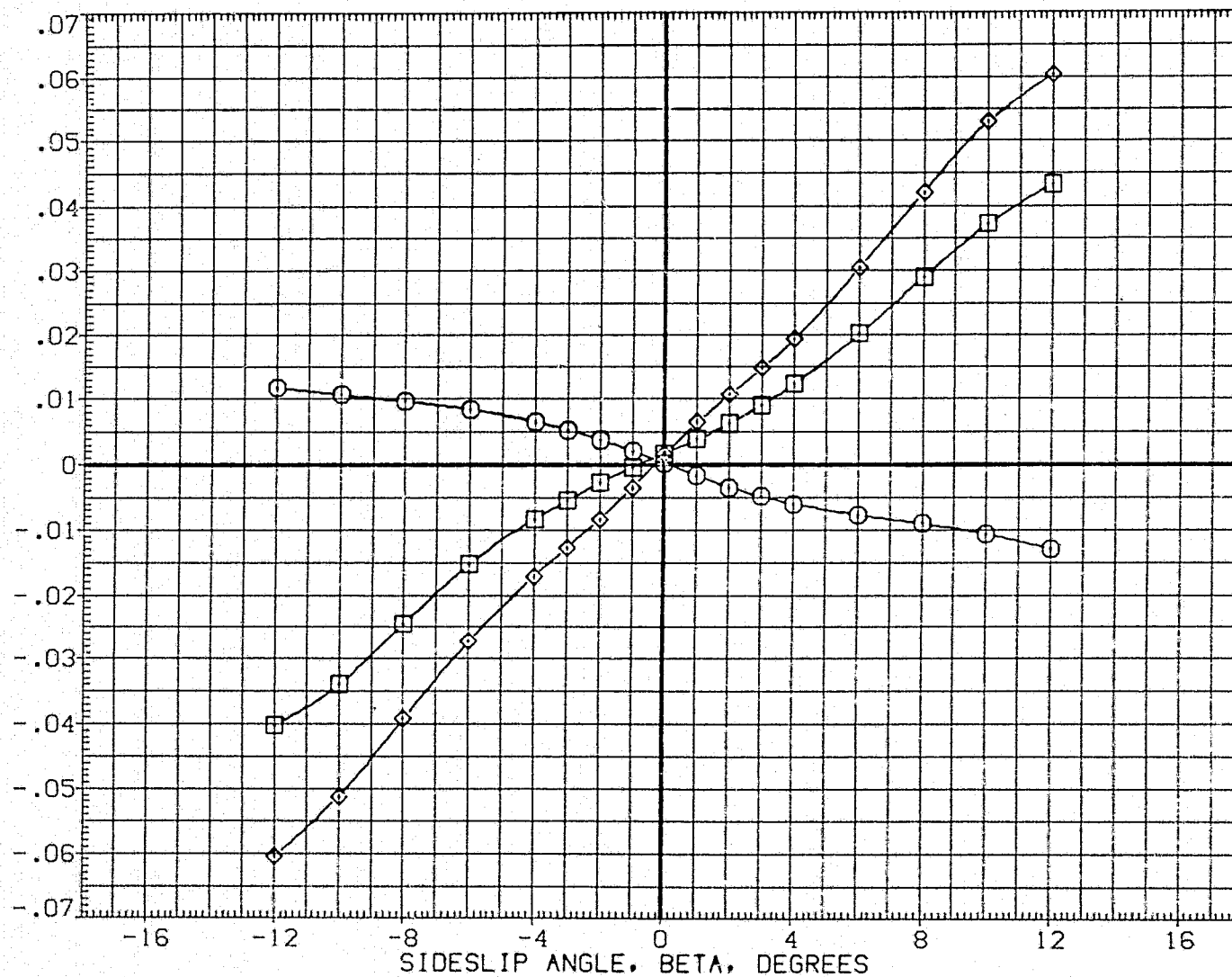


FIG. 246 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM056)	BTWT-1431CA5 K1 F20 H15.1A
(RGM057)	BTWT-1431CA5 K1 F20 H15.1A V9.1
(RGM060)	BTWT-1431CA5 K1 F20 H15.6 V9.1

ALPHA	STAB	S5-6
6.000	1.000	.000
6.000	1.000	.000
6.000	1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

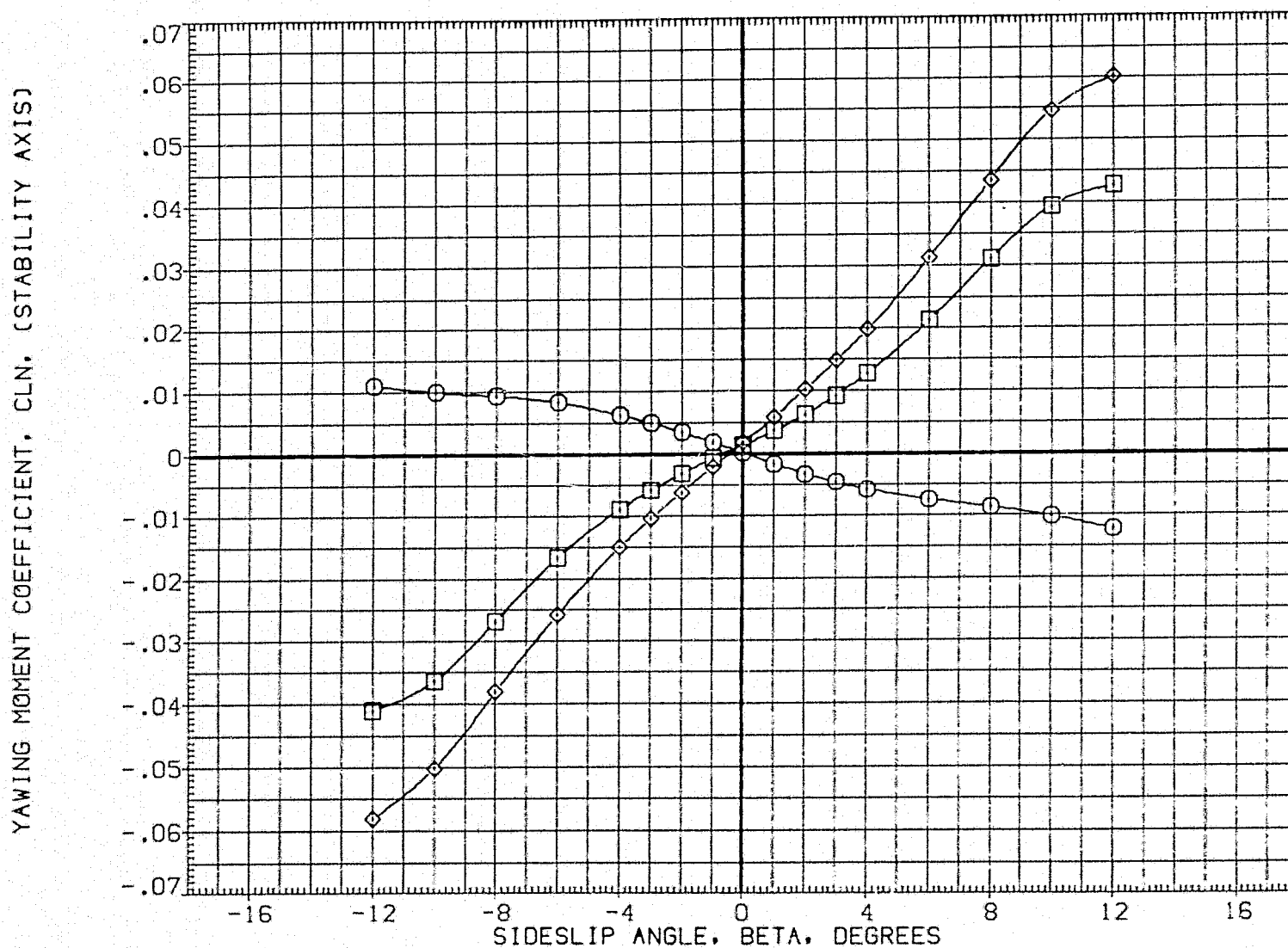


FIG. 246 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM056)	BTWT-1431CA5 KI F20 H15.1A
(RGM057)	BTWT-1431CA5 KI F20 H15.1A V9.1
(RGM060)	BTWT-1431CA5 KI F20 H15.6 V9.1

ALPHA	STAB	SS-6
6.000	1.000	.000
6.000	1.000	.000
6.000	1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

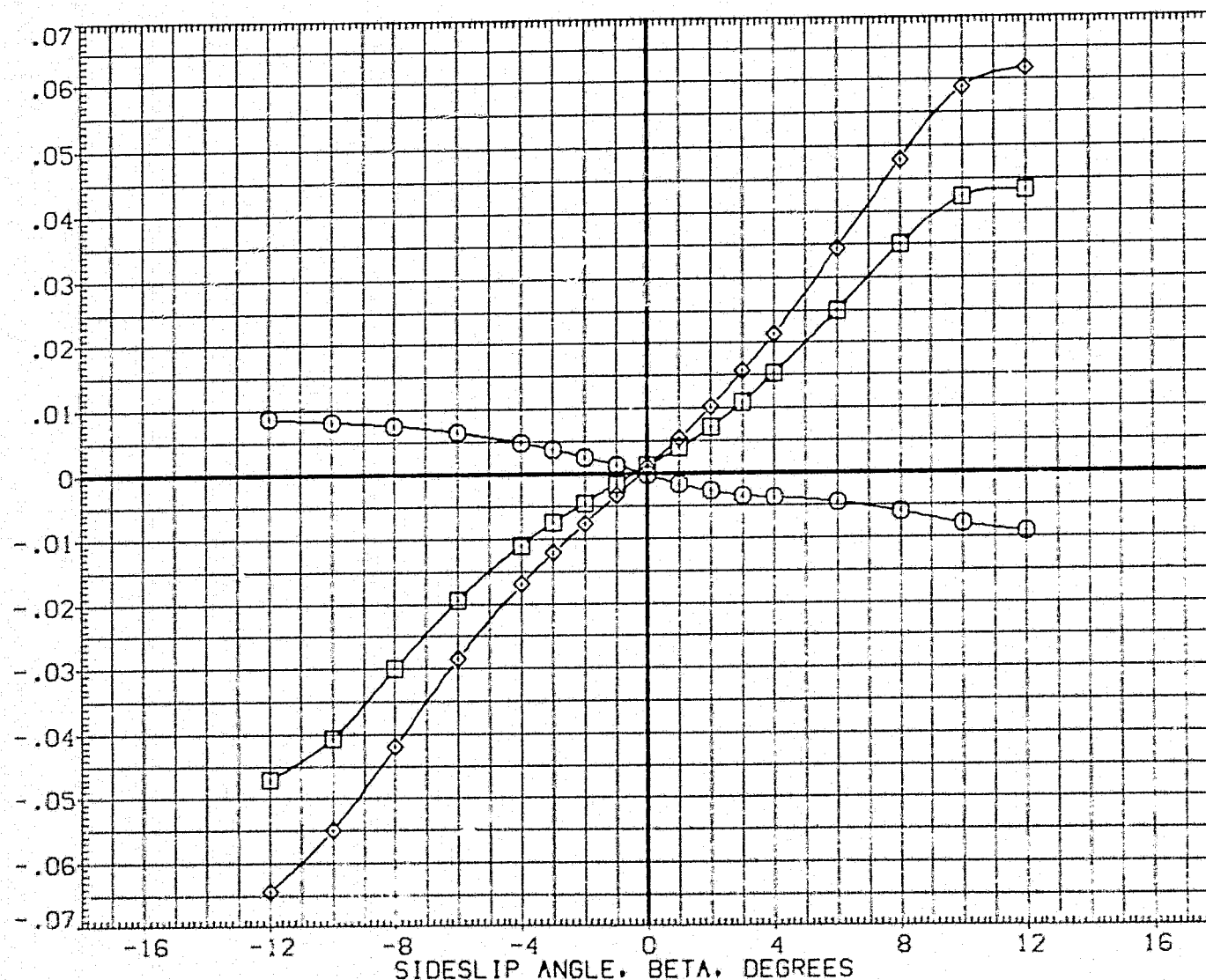


FIG. 246 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(R6M056) ○	BTWT-1431CAS K1 F20 HIS.1A
(R6M057) ◇	BTWT-1431CAS K1 F20 HIS.1A V9.1
(R6M060) ◇	BTWT-1431CAS K1 F20 HIS.6 V9.1

ALPHA	STAB	SS-6
6.000	1.000	.000
6.000	1.000	.000
6.000	1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SD, FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

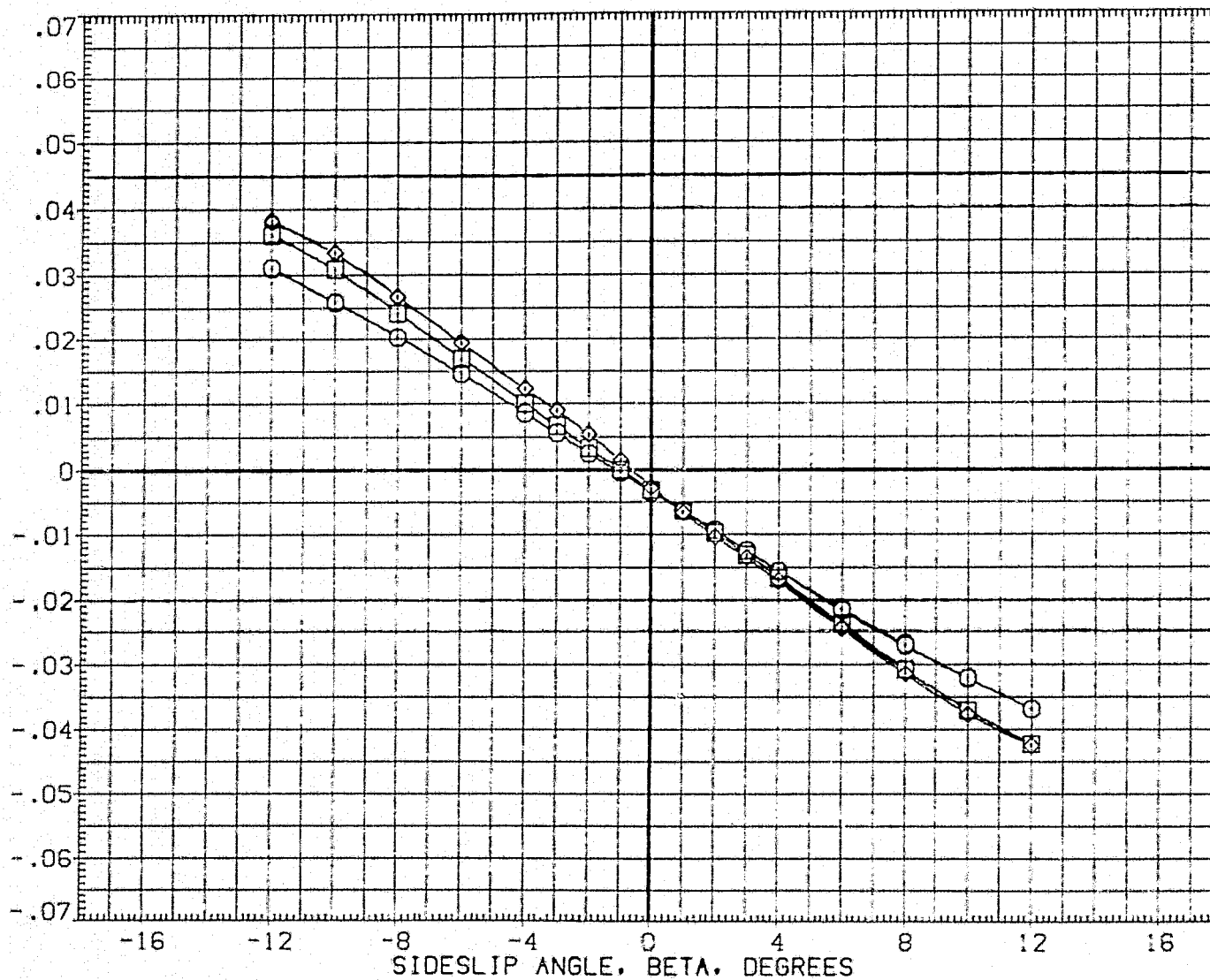


FIG. 246 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20  
(A)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM056)	BTWT-1431CAS KI F20 H15.1A
(RGM057)	BTWT-1431CAS KI F20 H15.1A V9.1
(RGM060)	BTWT-1431CAS KI F20 H15.6 V9.1

ALPHA	STAB	S5-6
6.000	1.000	.000
6.000	1.000	.000
6.000	1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

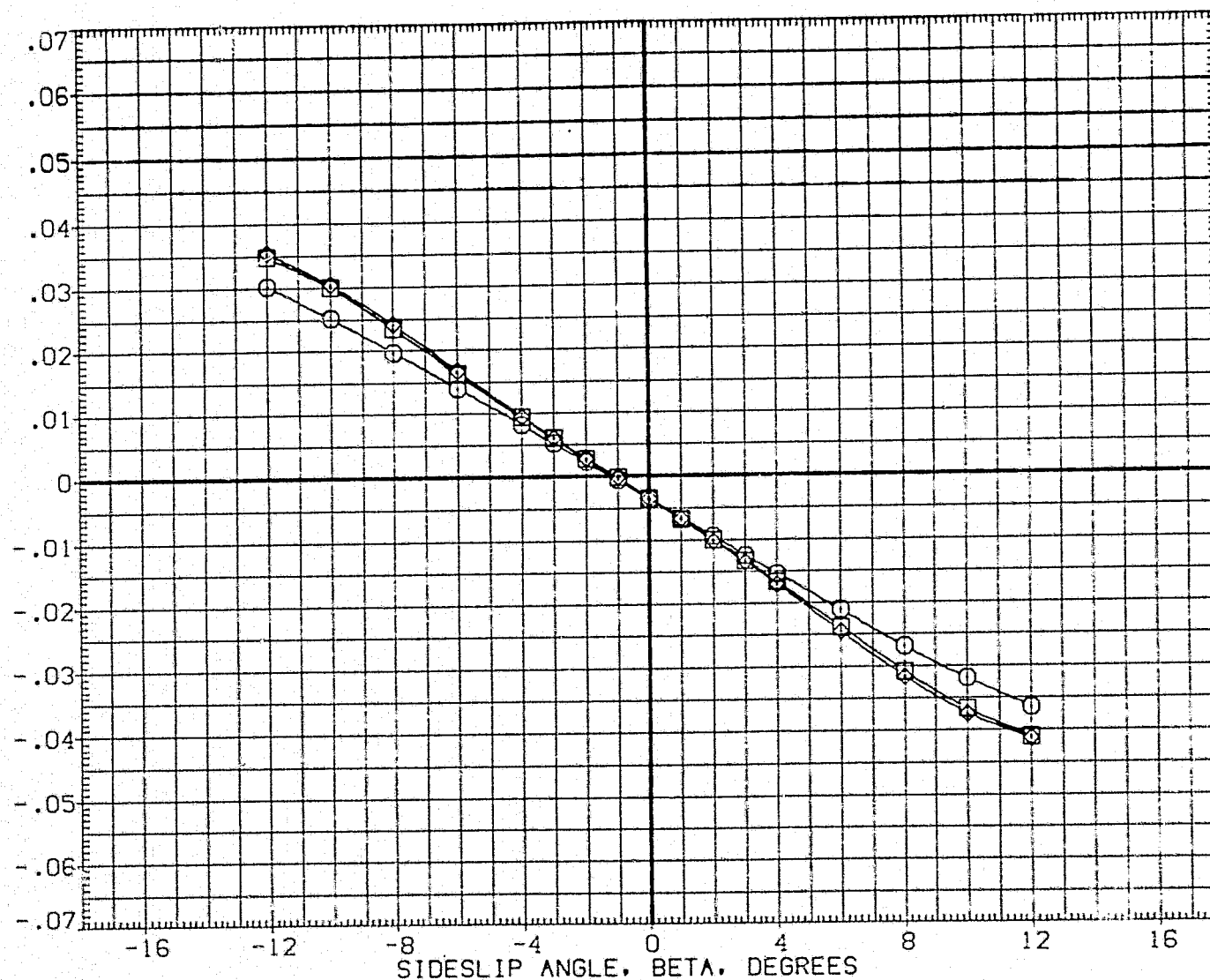


FIG. 246 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20  
(B)MACH = .60

DA A SET SYMBOL	CONFIGURATION DESCRIPTION
(RUM056)	BTWT-1431CA5 K1 F20 H15.1A
(RUM057)	BTWT-1431CA5 K1 F20 H15.1A V9.1
(RUM060)	BTWT-1431CA5 K1 F20 H15.6 V9.1

ALPHA	STAB	S5-6
6.000	1.000	.000
6.000	1.000	.000
6.000	1.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	50. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

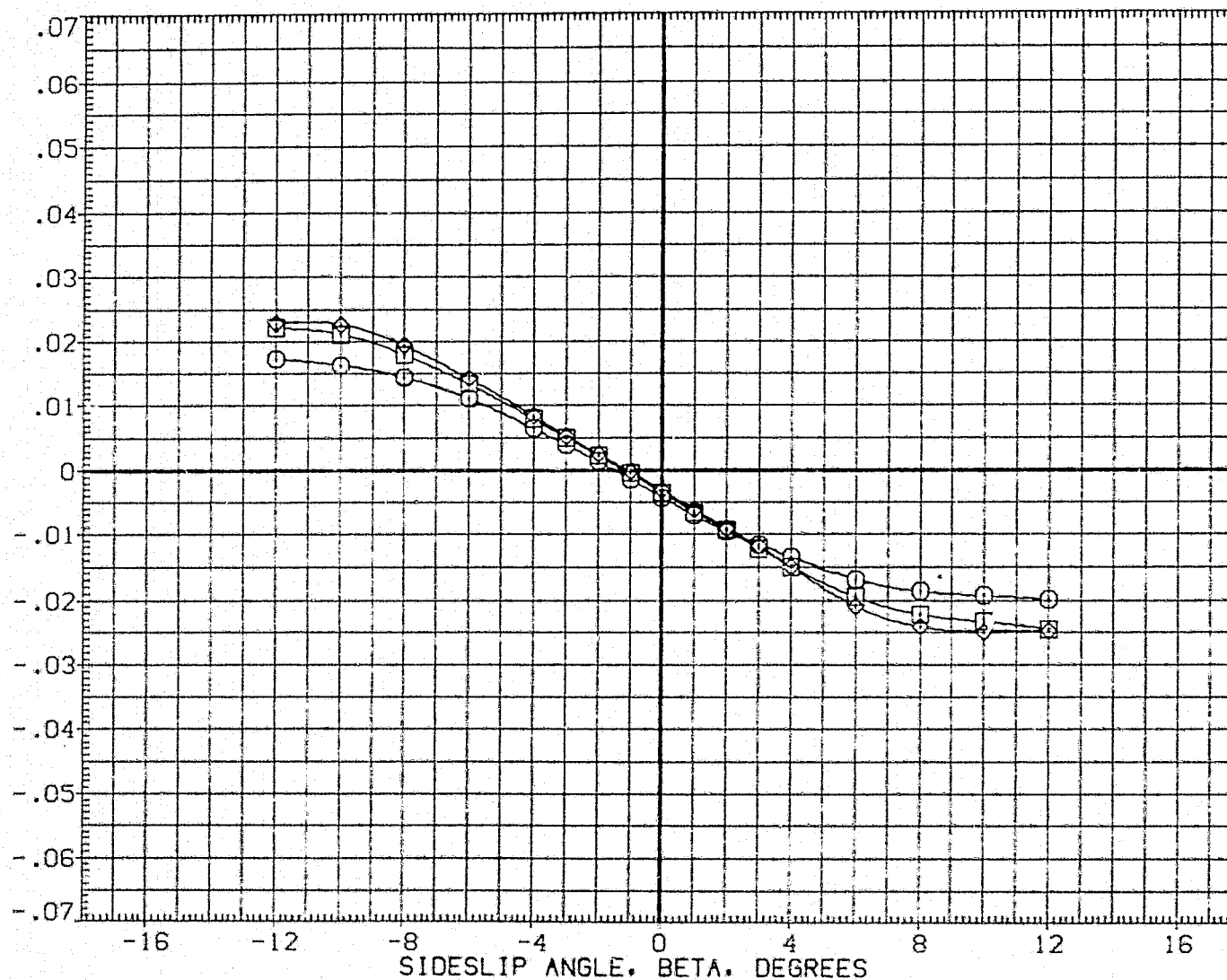


FIG. 246 747 ALONE, EFFECT OF HORIZ TIP FINS, FLAPS 20

(C)MACH = .70

DA A SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6
(R1M078)	○ CAS K1 F20 H15.1A (PLUS. ORB TC5 AT38.1 )	6.000	1.000	45.000
(R1M076)	□ CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )	6.000	1.000	45.000
(R1M067)	◇ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	6.000	1.000	45.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0330

SIDE FORCE COEFFICIENT, CY

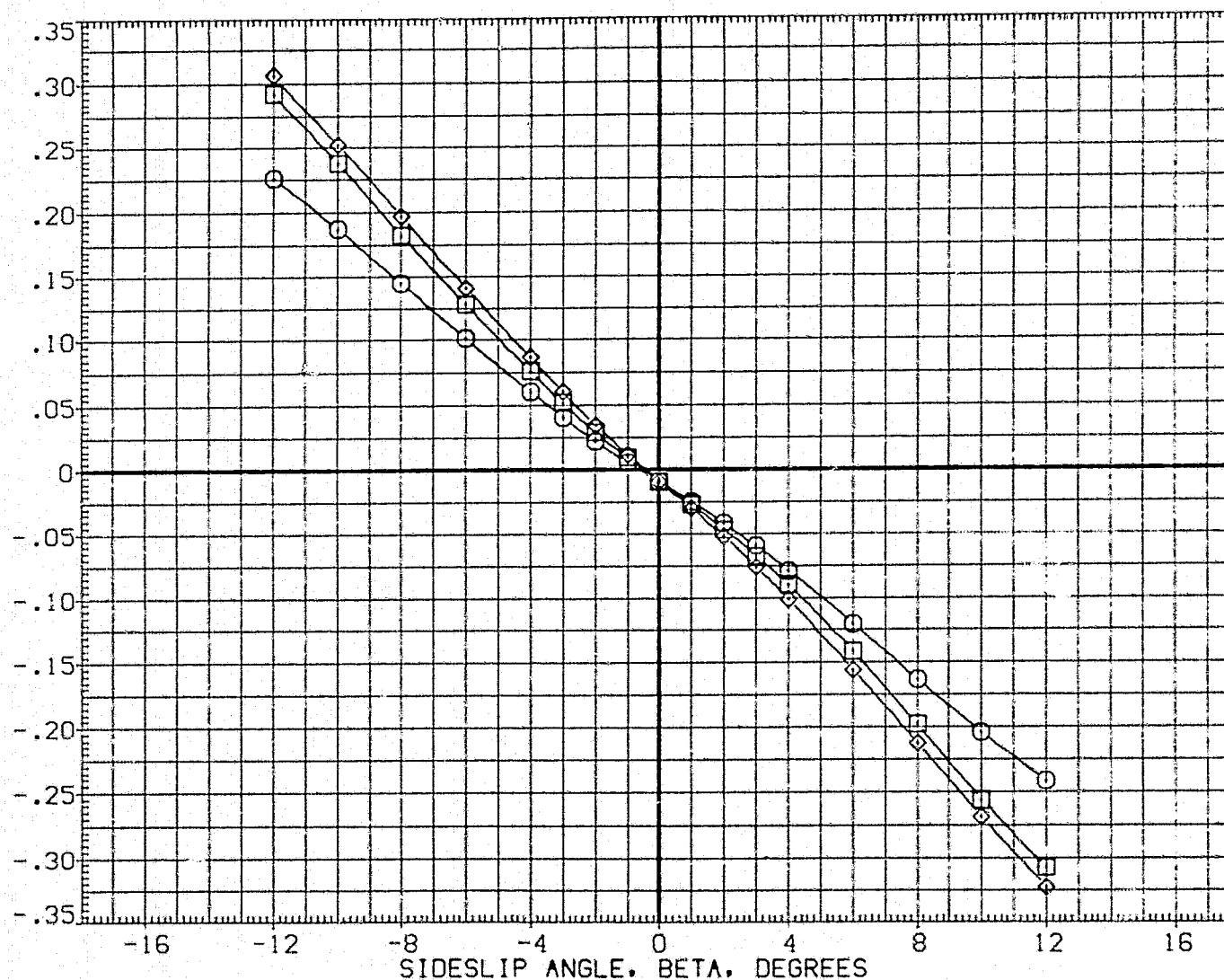


FIG. 247 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH  
(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	REFERENCE INFORMATION	
(RGMD78)	CAS K1 F20 H15.1A (PLUS. ORB TC5 AT38.1)	6.000	1.000	45.000	SREF	5500.0000 SQ. FT.
(RGMD76)	CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1)	6.000	1.000	45.000	LREF	327.8000 IN.
(RGMD67)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	6.000	1.000	45.000	BREF	2348.0000 IN.
					XMRF	1339.9100 IN. XC
					YMRF	.0000 IN. YC
					ZMRF	190.7500 IN. ZC
					SCALE	.0300

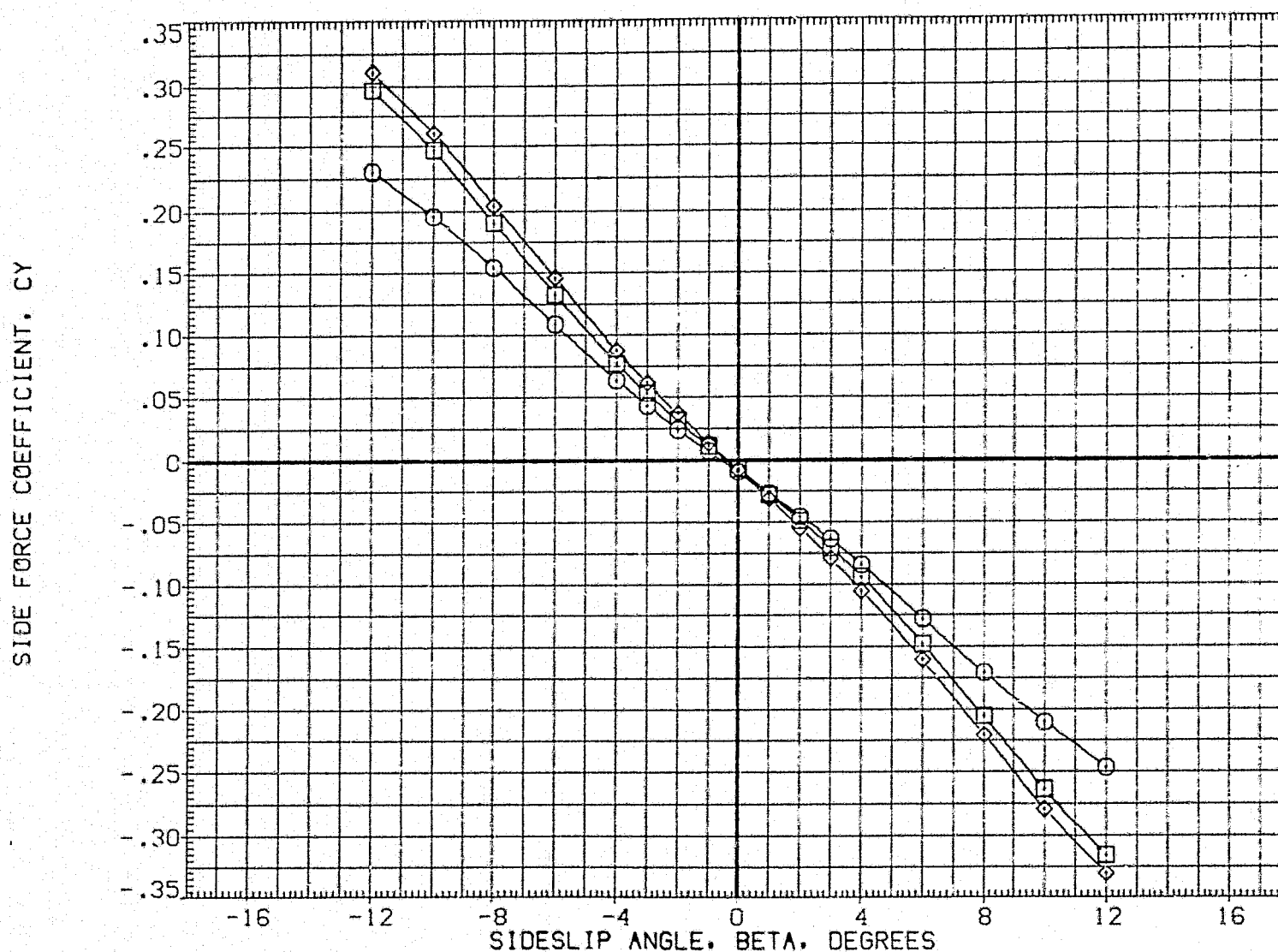


FIG. 247 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM078)  $\square$  CAS K1 F20 H15.1A (PLUS. ORB TC5 AT38.1 )  
 (RGM076)  $\square$  CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM067)  $\diamond$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

ALPHA STAB S5-6  
 6.000 1.000 45.000  
 6.000 1.000 45.000  
 6.000 1.000 45.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

SIDE FORCE COEFFICIENT, CY

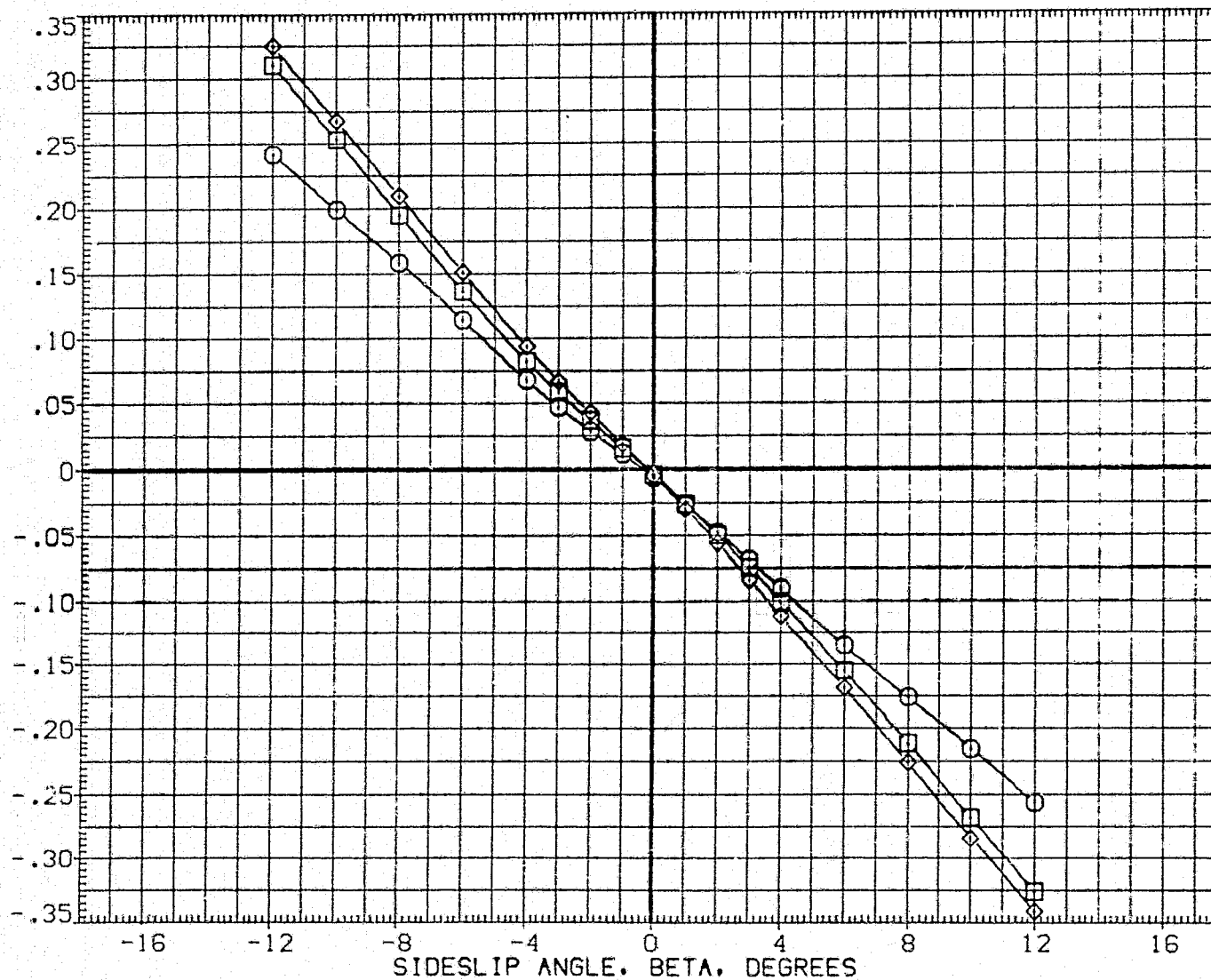


FIG. 247 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(C)MACH = .70

6-7

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	REFERENCE INFORMATION	
(RGM078)	CAS K1 F20 H15.1A (PLUS. ORB TCS AT38.1)	6.000	1.000	45.000	SREF	5500.0000 SQ.FT.
(RGM076)	CAS K1 F20 H15.1A V9.1 (PLUS. ORB TCS AT38.1)	6.000	1.000	45.000	LREF	327.8000 IN.
(RGM067)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	6.000	1.000	45.000	BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

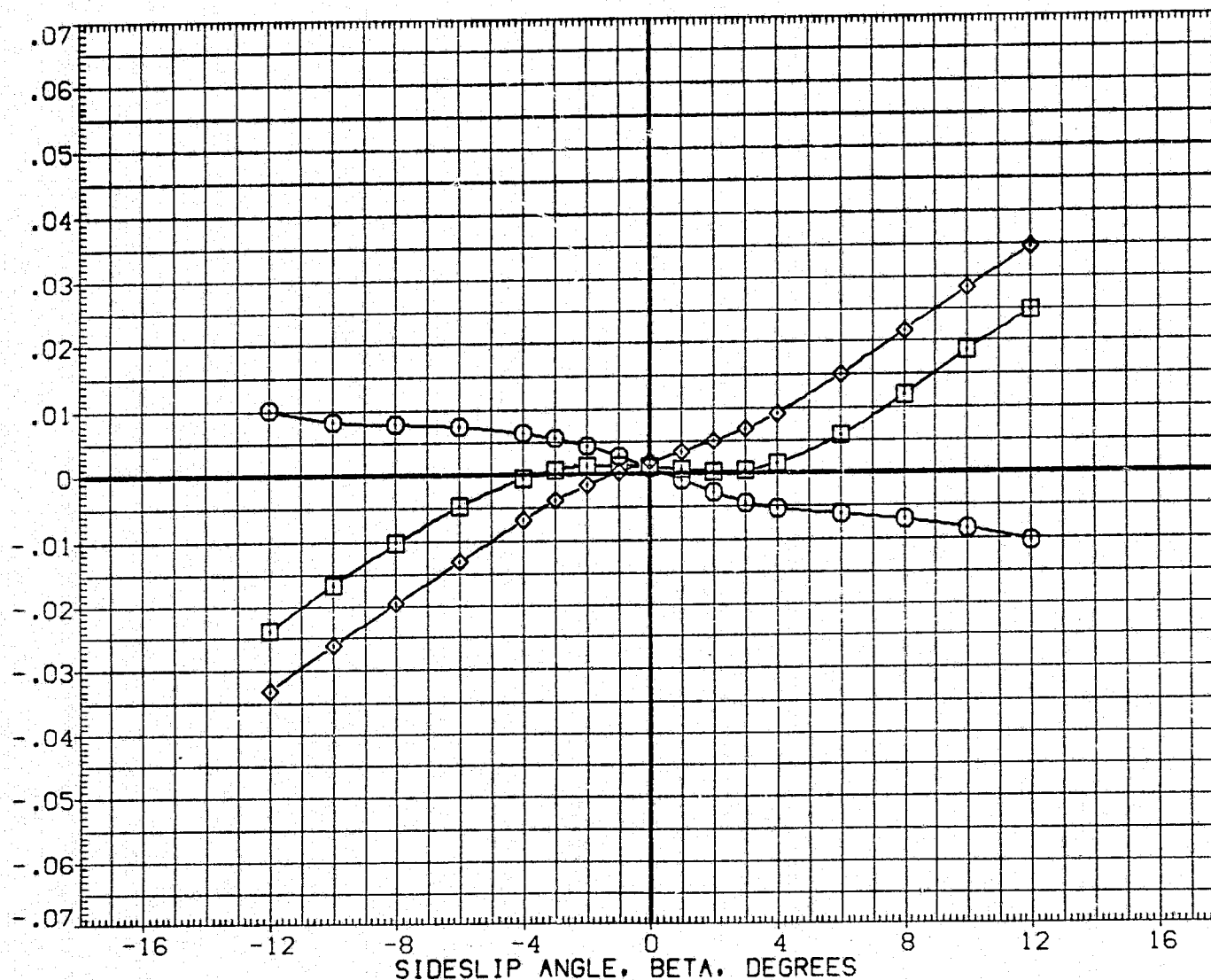


FIG. 247 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6
(RGM078)	CAS K1 F20 H15.1A (PLUS. ORB TC5 AT38.1)	6.000	1.000	45.000
(RGM076)	CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1)	6.000	1.000	45.000
(RGM067)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	6.000	1.000	45.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ. FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

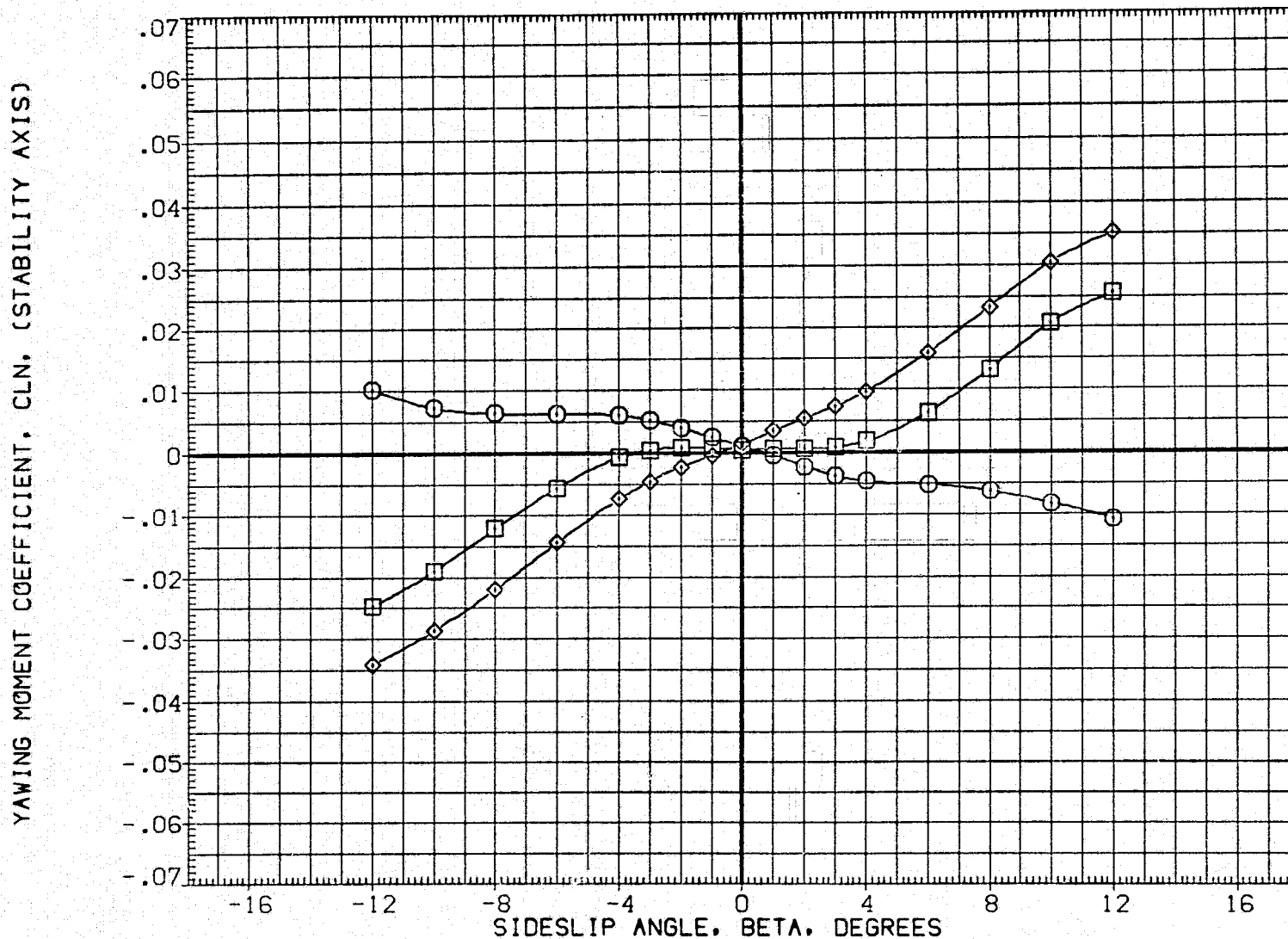


FIG. 247 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA I	STAB	SS-6	REFERENCE INFORMATION	
[RGM078]	CAS K1 F20 H15.1A [PLUS. ORB TC5 AT38.1 ]	6.000	1.000	45.000	SREF	5500.0000 SQ.FT.
[RGM076]	CAS K1 F20 H15.1A V9.1 [PLUS. ORB TC5 AT38.1 ]	6.000	1.000	45.000	LREF	327.8000 IN.
[RGM067]	CAS K1 F20 H15.6 V9.1 [PLUS. ORB TC5 AT38.1 ]	6.000	1.000	45.000	BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300

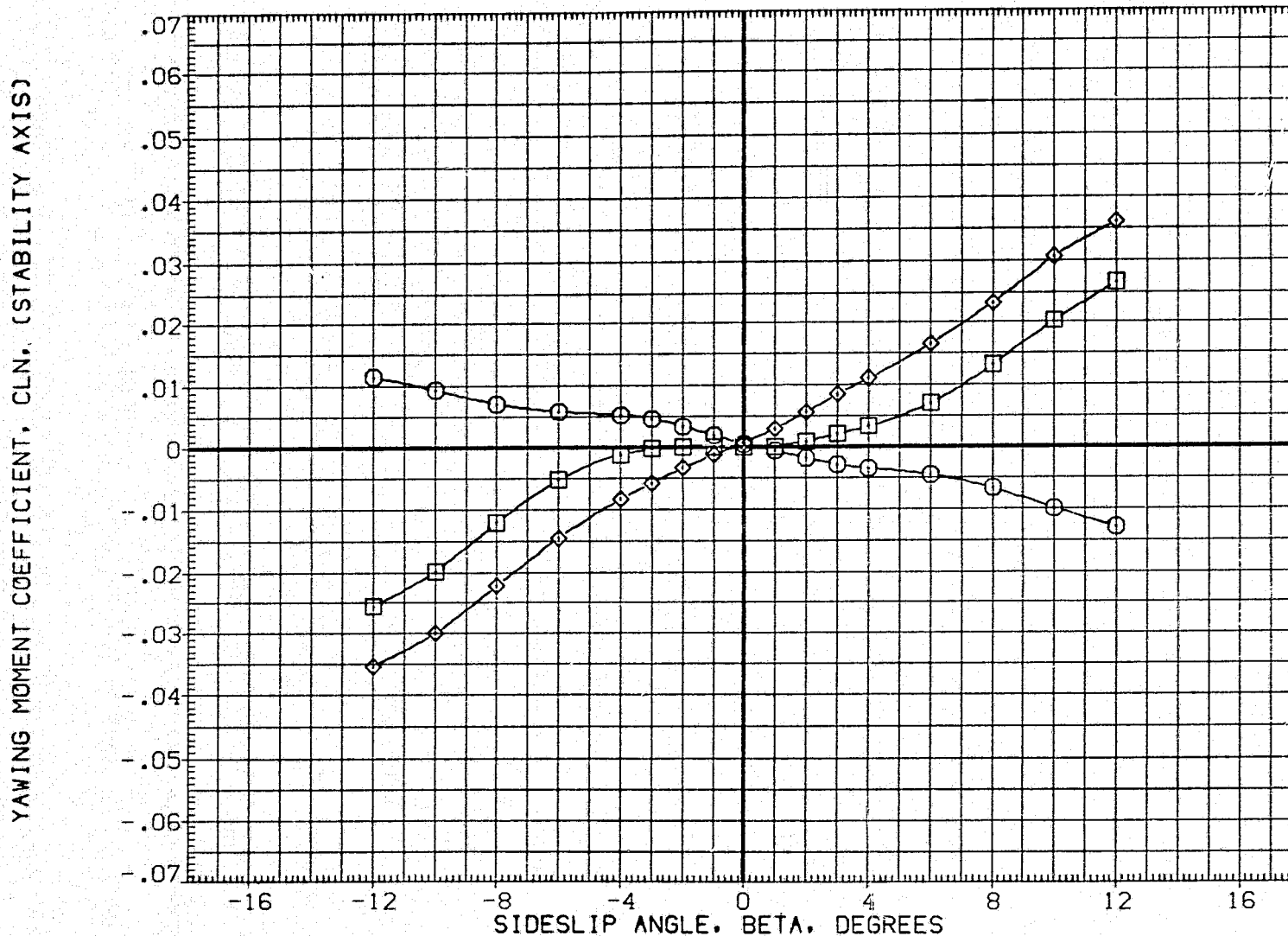


FIG. 247 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(C)MACH = .70



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	REFERENCE INFORMATION	
(RGM078)	CA5 KI F20 H15.1A (PLUS. ORB TC5 AT38.1)	6.000	1.000	45.000	SREF	5500.0000 SQ.FT.
(RGM076)	CA5 KI F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1)	6.000	1.000	45.000	LREF	327.8000 IN.
(RGM057)	CA5 KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	6.000	1.000	45.000	BREF	2348.0000 IN.
					XMRP	1339.9100 IN. XC
					YMRP	.0000 IN. YC
					ZMRP	190.7500 IN. ZC
					SCALE	.0300



FIG. 247 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM078)	□	CAS	K1	F20	H15.1A	(PLUS. ORB TCS AT38.1 )
(RGM076)	○	CAS	K1	F20	H15.1A	V9.1 (PLUS. ORB TCS AT38.1 )
(RGM067)	◇	CAS	K1	F20	H15.6	V9.1 (PLUS. ORB TCS AT38.1 )

ALPHA	STAB	SS-6
6.000	1.000	45.000
6.000	1.000	45.000
6.000	1.000	45.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

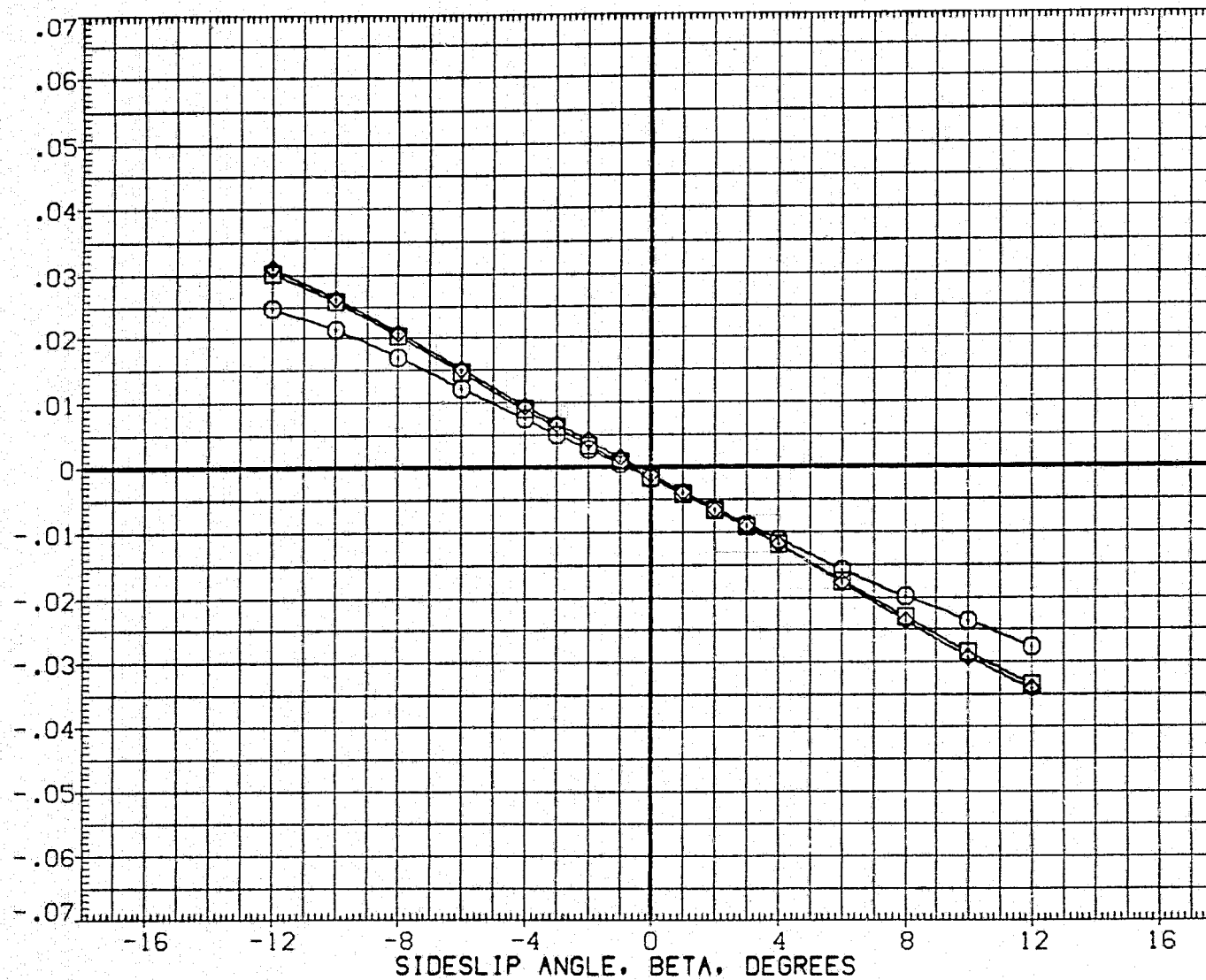


FIG. 247 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(B)MACH = .60

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM078)  $\square$  CAS K1 F20 H15.1A (PLUS. ORB TC5 AT38.1 )  
 (RGM076)  $\square$  CAS K1 F20 H15.1A V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM067)  $\diamond$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

ALPHA1 STAB SS-6  
 6.000 1.000 45.000  
 6.000 1.000 45.000  
 6.000 1.000 45.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

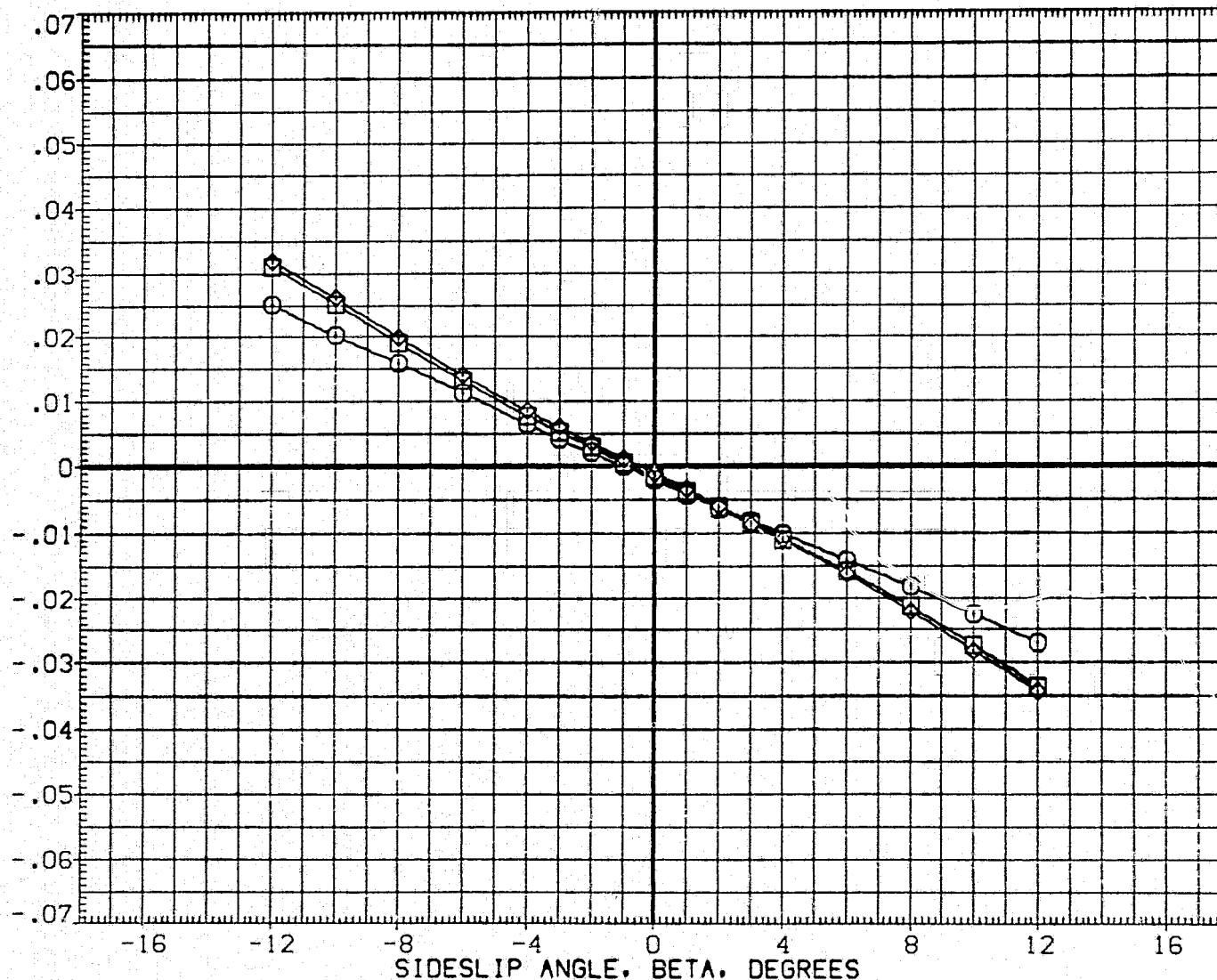


FIG. 247 747+ORB(10 DEG), EFFECT OF HORIZ TIP FINS, FLAPS 20 LAUNCH

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM051) ○	BTWT-1431CAS KI FO H15.6 V9.1 AT38 AT39
(RGM050) □	BTWT-1431CAS KI FO H15.6 V9.1 AT38 AT39

STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
1.000	.000	.000	20.000	SREF	5500.0000	SQ.FT.
1.000	15.000	15.000	20.000	LREF	327.8000	IN.
				BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

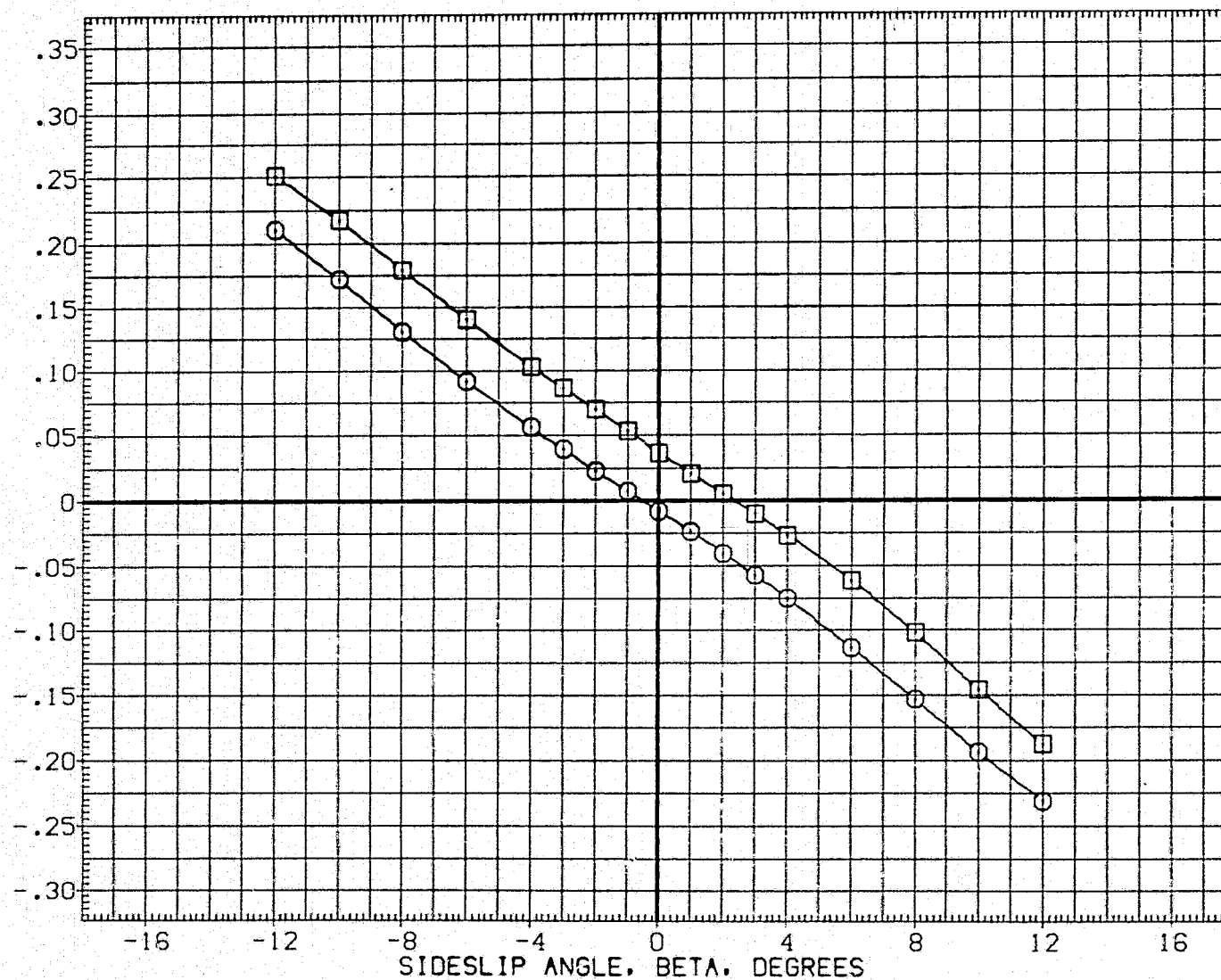


FIG. 248 747 ALONE, RUDDER EFFECT WITH ORB SUPPORTS, FLAPS UP, ALPHA=6 DEG

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM051)	BTWT-1431CA5 K1 FO H15.6 V9.1 AT38 AT39
(RGM050)	BTWT-1431CA5 K1 FO H15.6 V9.1 AT38 AT39

STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION
1.000	.000	.000	20.000	SREF 5500.0000 SQ.FT.
1.000	15.000	15.000	20.000	LREF 327.8000 IN.
				BREF 2348.0000 IN.
				XMRP 1339.9100 IN. XC
				YMRP .0000 IN. YC
				ZMRP 190.7500 IN. ZC
				SCALE .0300

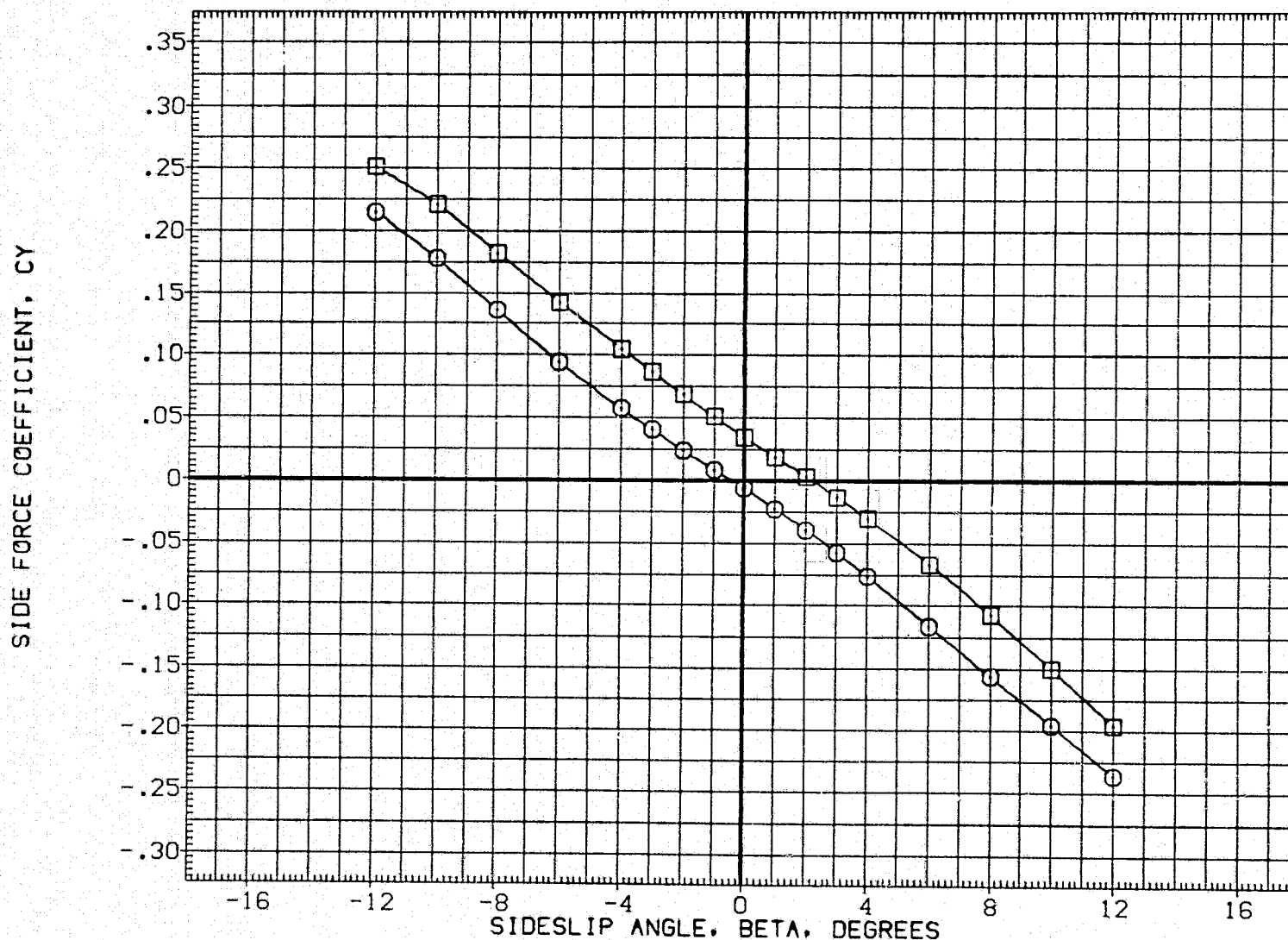


FIG. 248 747 ALONE, RUDDER EFFECT WITH ORB SUPPORTS, FLAPS UP, ALPHA=6 DEG

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM051) ○	BTWT-1431CAS K1 FO H15.6 V9.1 AT38 AT39
(RGM050) □	BTWT-1431CAS K1 FO H15.6 V9.1 AT38 AT39

STAB	RUD-U	RUD-L	S5-6
1.000	.000	.000	20.000
1.000	15.000	15.000	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1239.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

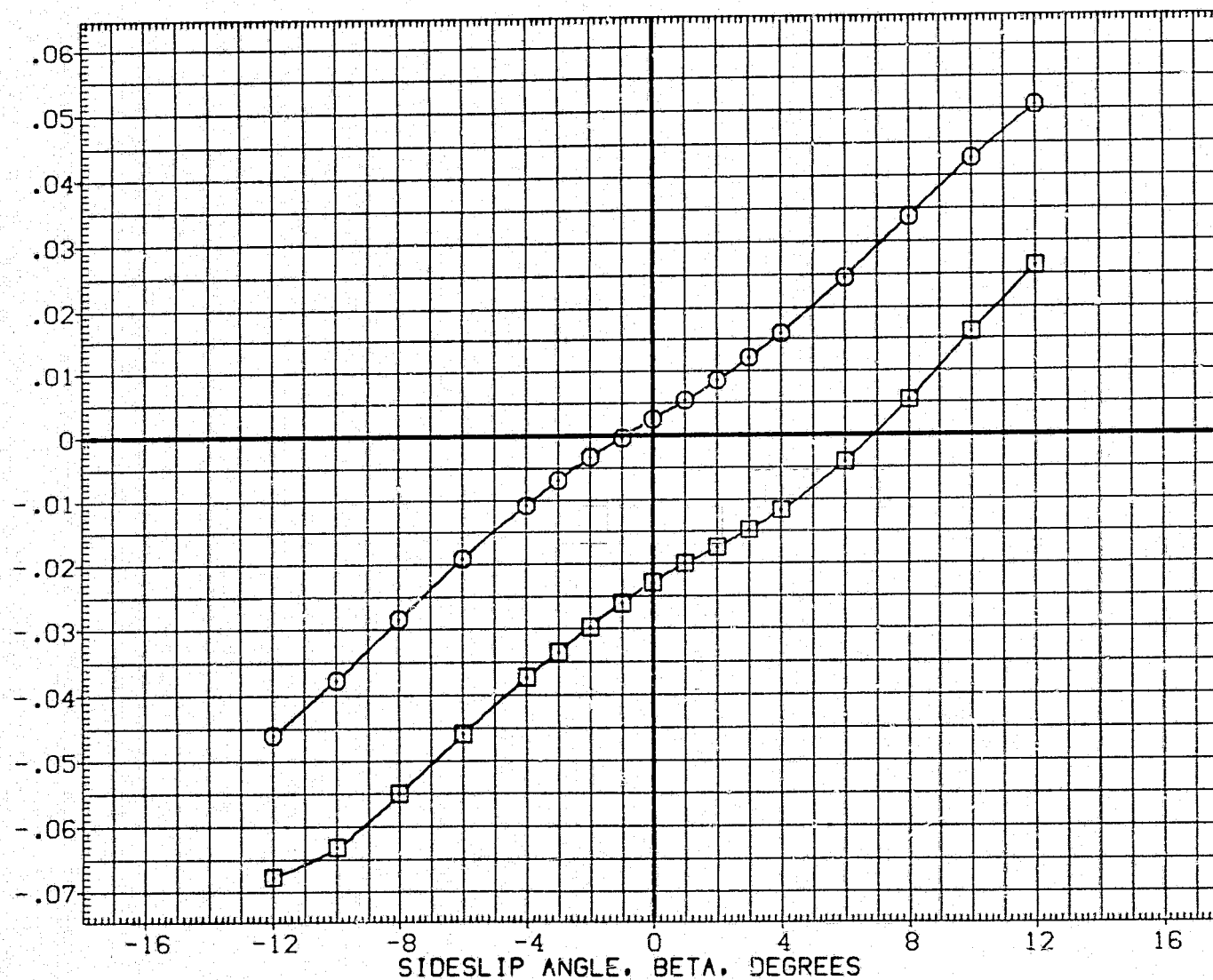


FIG. 248 747 ALONE, RUDDER EFFECT WITH ORB SUPPORTS, FLAPS UP, ALPHA=6 DEG

(A)MACH = .50

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM051) ○	BTWT-1431CAS K1 FO H15.6 V9.1 AT38 AT39
(RGM050) □	BTWT-1431CAS K1 FO H15.6 V9.1 AT39 AT39

STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
1.000	.000	.000	20.000	SREF	5500.0000	SQ.FT.
1.000	15.000	15.000	20.000	LREF	327.8000	IN.
				BREF	2346.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

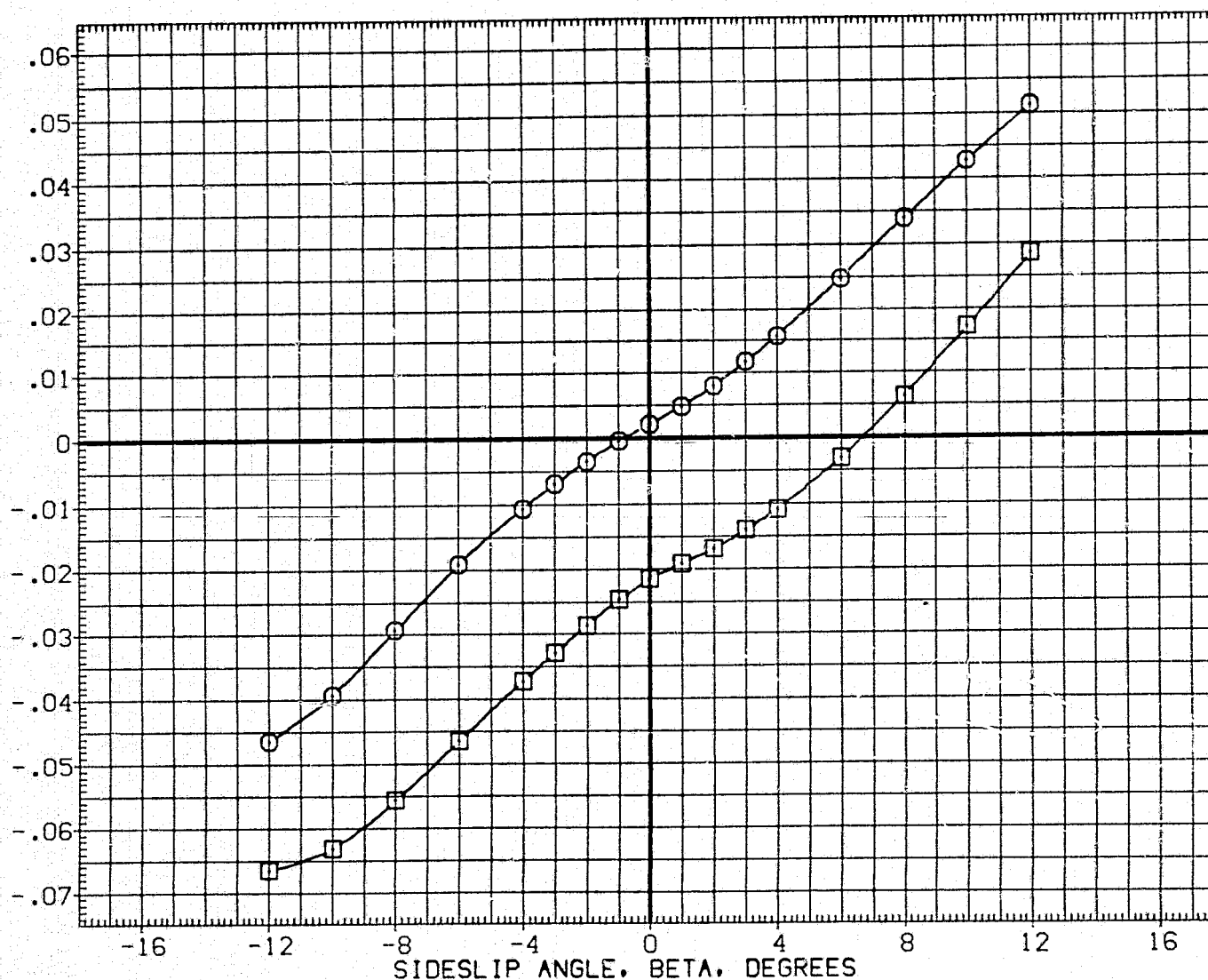




FIG. 248 747 ALONE, RUDDER EFFECT WITH ORB SUPPORTS, FLAPS UP, ALPHA=6 DEG

(B)MACH = .60

DA A SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM051)  BTWT-1431CAS KI FO H15.6 V9.1 AT38 AT39  
 (RGM050)  BTWT-1431CAS KI FO H15.6 V9.1 AT38 AT39

STAB	RUD-U	RUD-L	SS-6
1.000	.000	.000	20.000
1.000	15.000	15.000	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.8000	IN.
BREF	2348.0000	IN.
XMRP	1339.9100	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.7500	IN. ZC
SCALE	.0300	

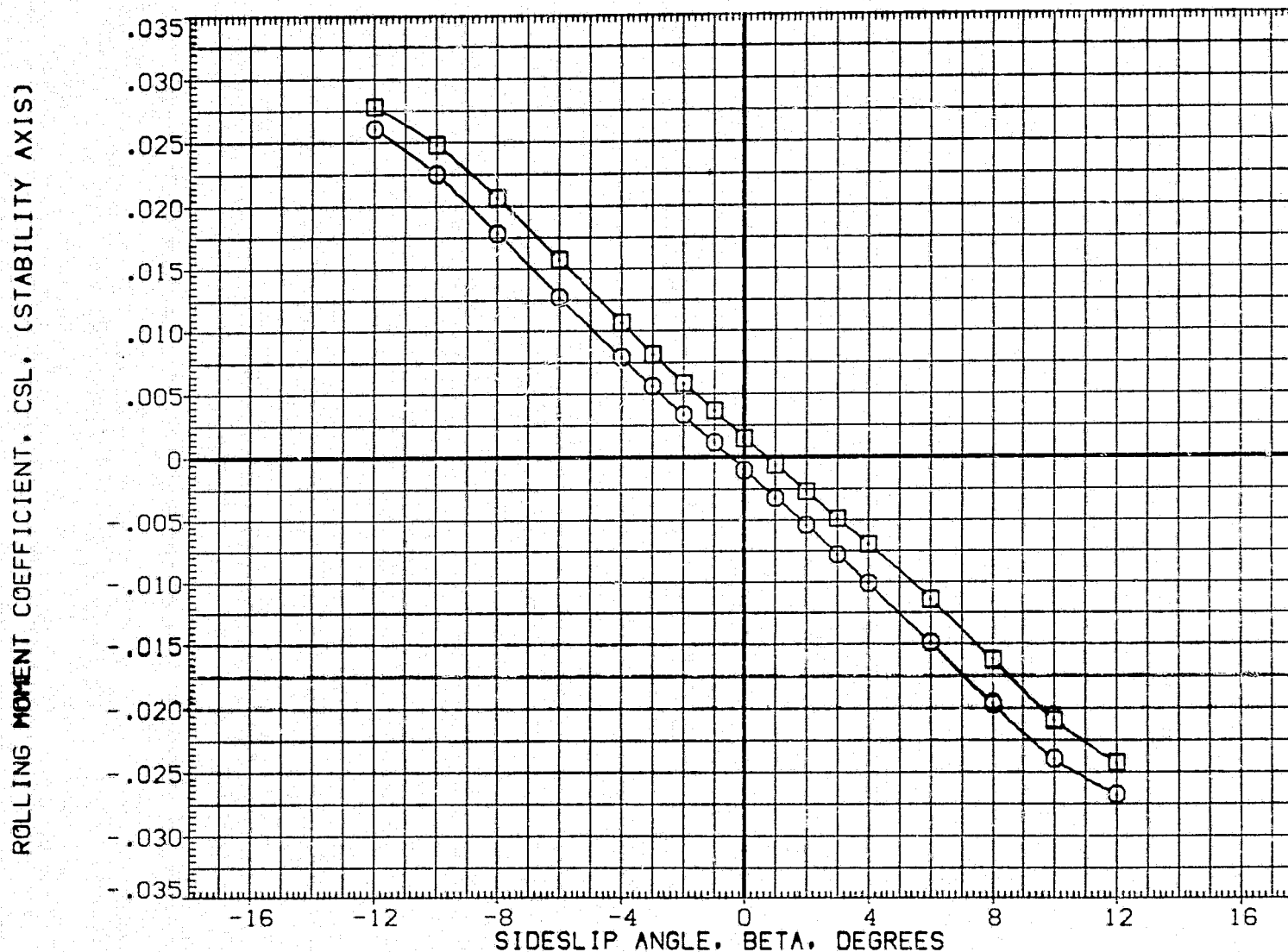


FIG. 248 747 ALONE, RUDDER EFFECT WITH ORB SUPPORTS, FLAPS UP, ALPHA=6 DEG

(A) MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM051)	BTWT-1431CA5 K1 FO H15.6 V9.1 AT38 AT39
(RGM050)	BTWT-1431CA5 K1 FO H15.6 V9.1 AT38 AT39

STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
1.000	.000	.000	20.000	SREF	5500.0000	SQ.FT.
1.000	15.000	15.000	20.000	LREF	327.8000	IN.
				BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

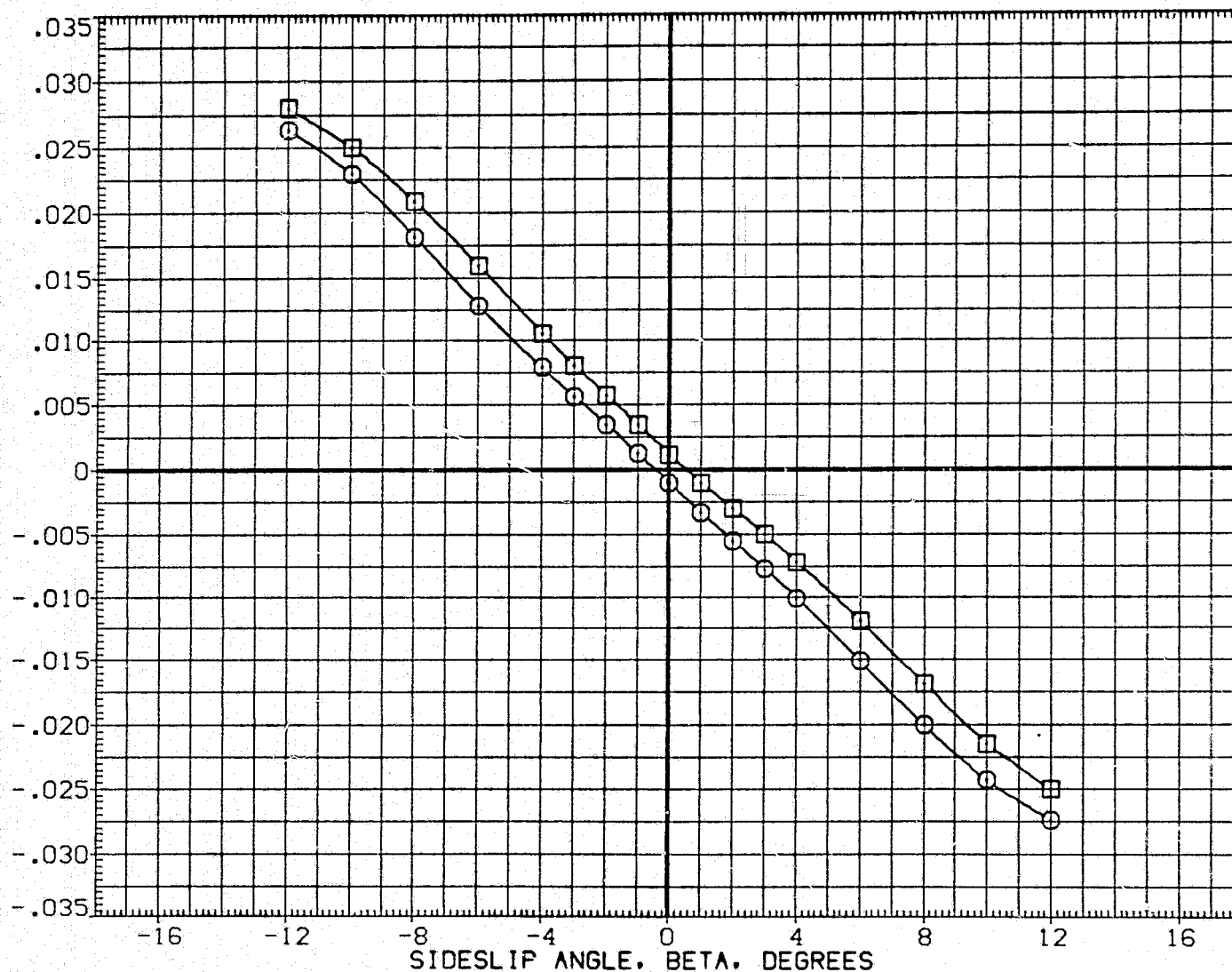


FIG. 248 747 ALONE, RUDDER EFFECT WITH ORB SUPPORTS, FLAPS UP, ALPHA=6 DEG

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(R3M105)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.3)	-2.000			.000	SREF	5500.0000	SQ.FT.
(R3M118)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	.000	.000	.000	LREF	327.8000	IN.
(R3M124)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	10.000	10.000	.000	BREF	2348.0000	IN.
(R3M121)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	-2.000	10.000	10.000	.000	XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

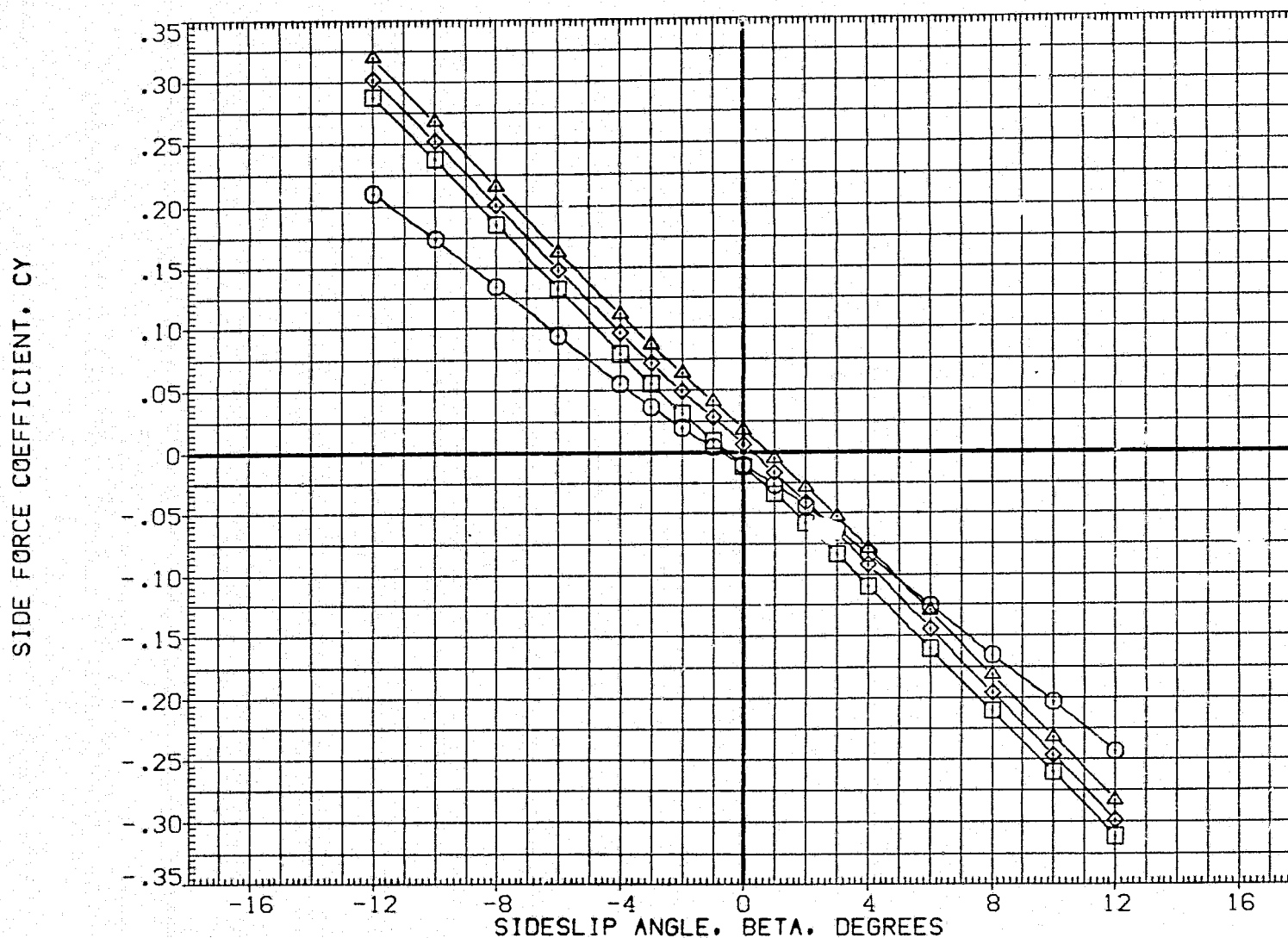


FIG. 249 747+ORB(4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA=6 DEG

(A) MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RGM105)	CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	-2.000			.000	SREF	5500.0000	SQ.FT.
(RGM118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	.000	.000	.000	LREF	327.8000	IN.
(RGM124)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	10.000	.000	BREF	2348.0000	IN.
(RGM121)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	10.000	.000	XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

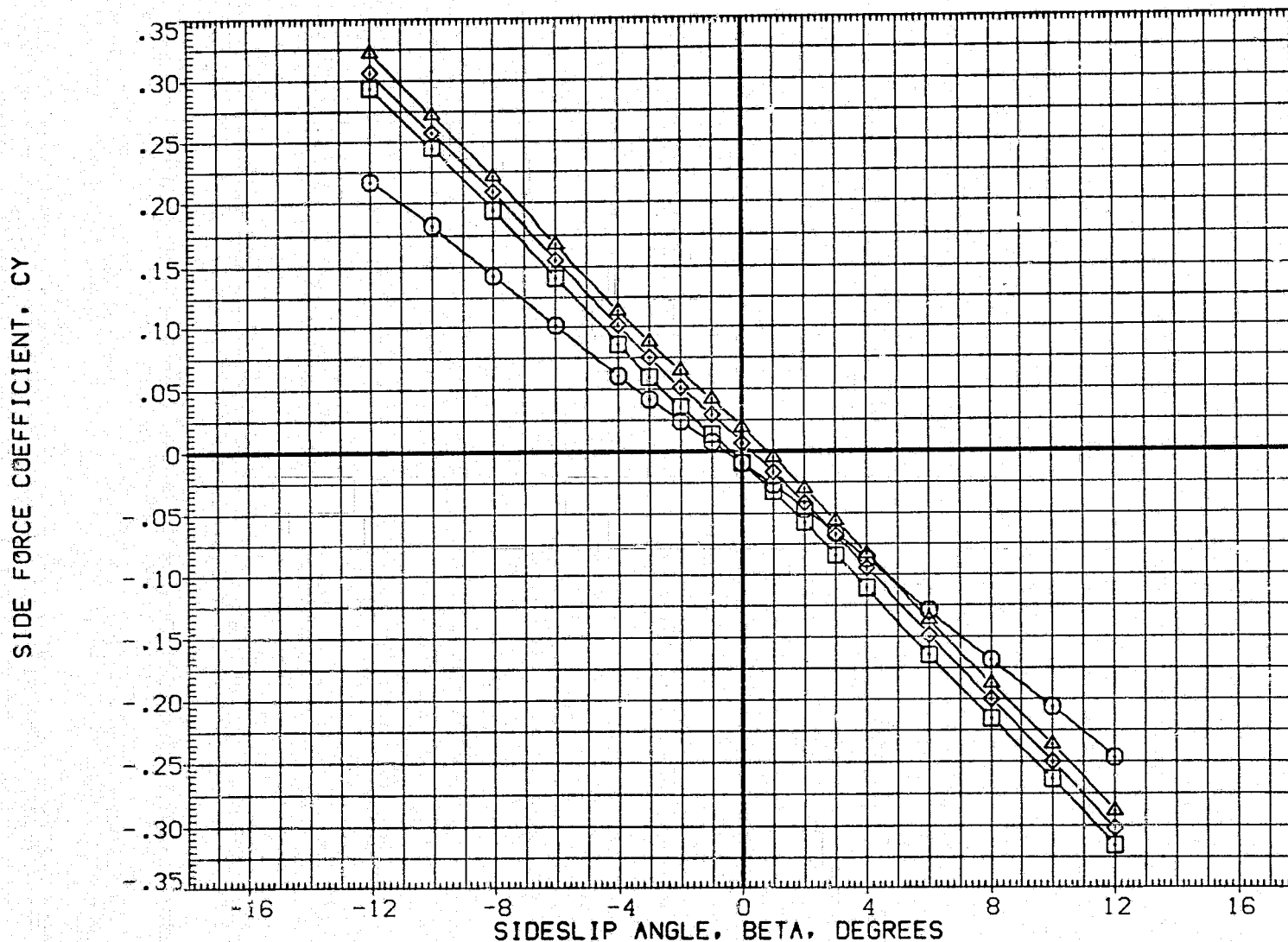


FIG. 249 747+ORB(4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA=6 DEG

(B)MACH = .50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-S	REFERENCE INFORMATION		
(RGM105)	○	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	-2.000			.000	SREF	5500.0000	SQ.FT.
(RGM118)	□	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	.000	.000	LREF	327.8000	IN.
(RGM124)	◇	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	BREF	2348.0000	IN.
(RGM121)	△	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	XMRP	1339.9100	IN. XC
							YMRP	.0000	IN. YC
							ZMRP	190.7500	IN. ZC
							SCALE	.0300	

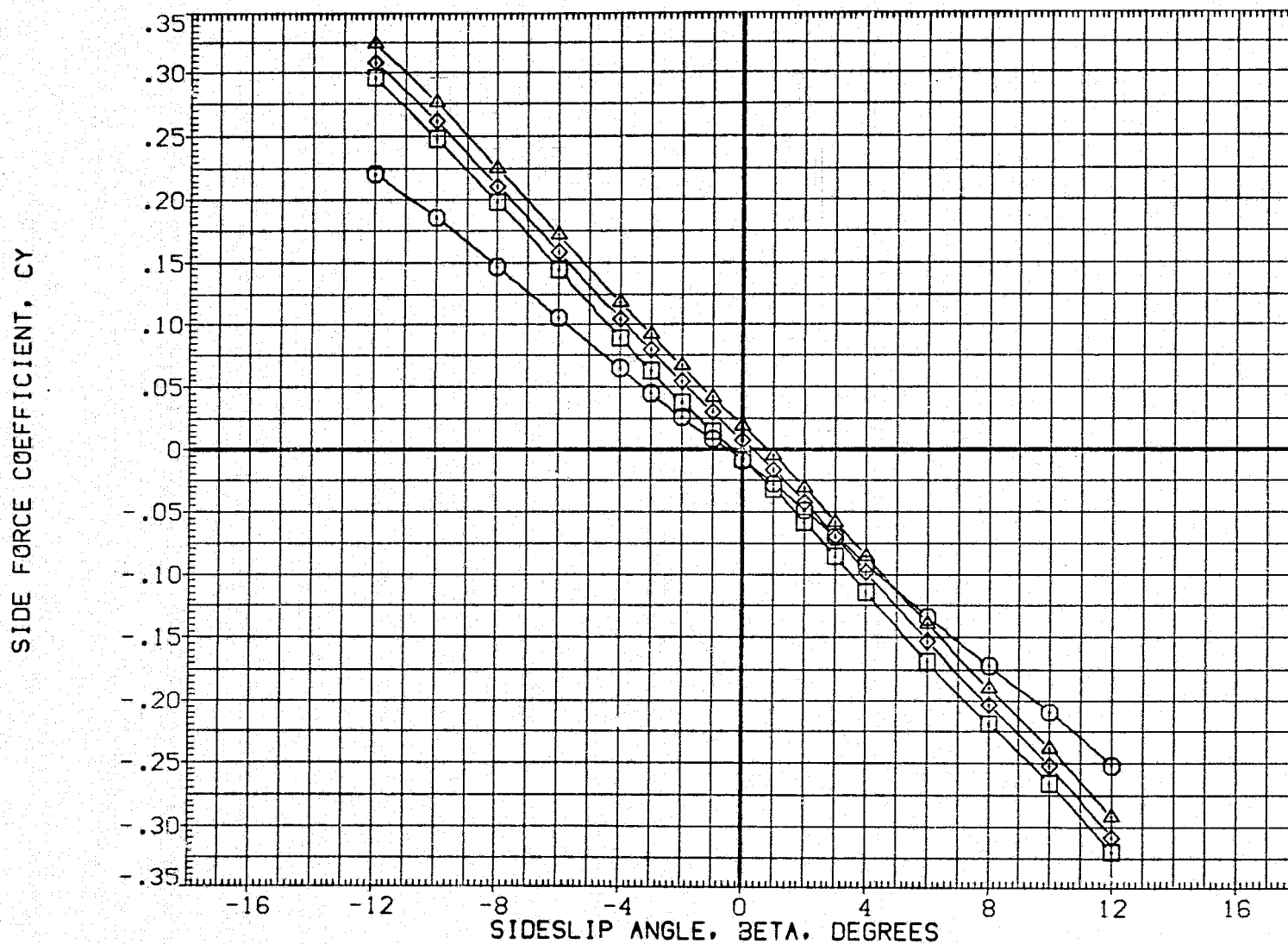


FIG. 249 747+ORB(4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA1=6 DEG

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(RGM105)	CA5 KI FO H15.1A (PLUS. ORB TC5 AT38.3 )	-2.000			.000	SREF	5500.0000	50.FT.
(RGM118)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	.000	.000	LREF	327.8000	IN.
(RGM124)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	BREF	2348.0000	IN.
(RGM121)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

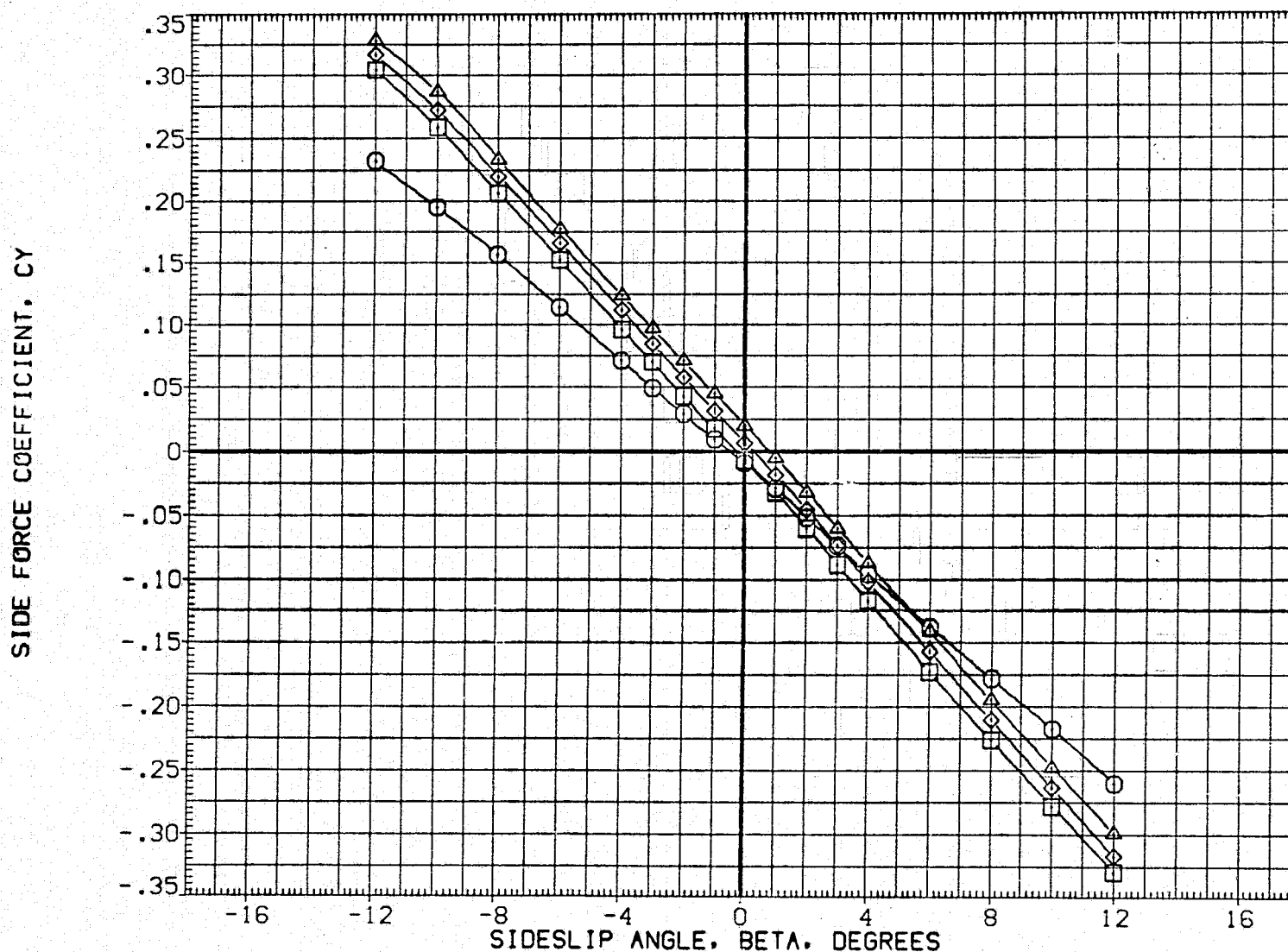


FIG. 249 747+ORB(4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA=6 DEG

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION
(RGM105)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	-2.000			.000	SREF 5500.0000 SQ.FT.
(RGM118)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	.000	.000	LREF 327.8000 IN.
(RGM124)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	BREF 2348.0000 IN.
(RGM121)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

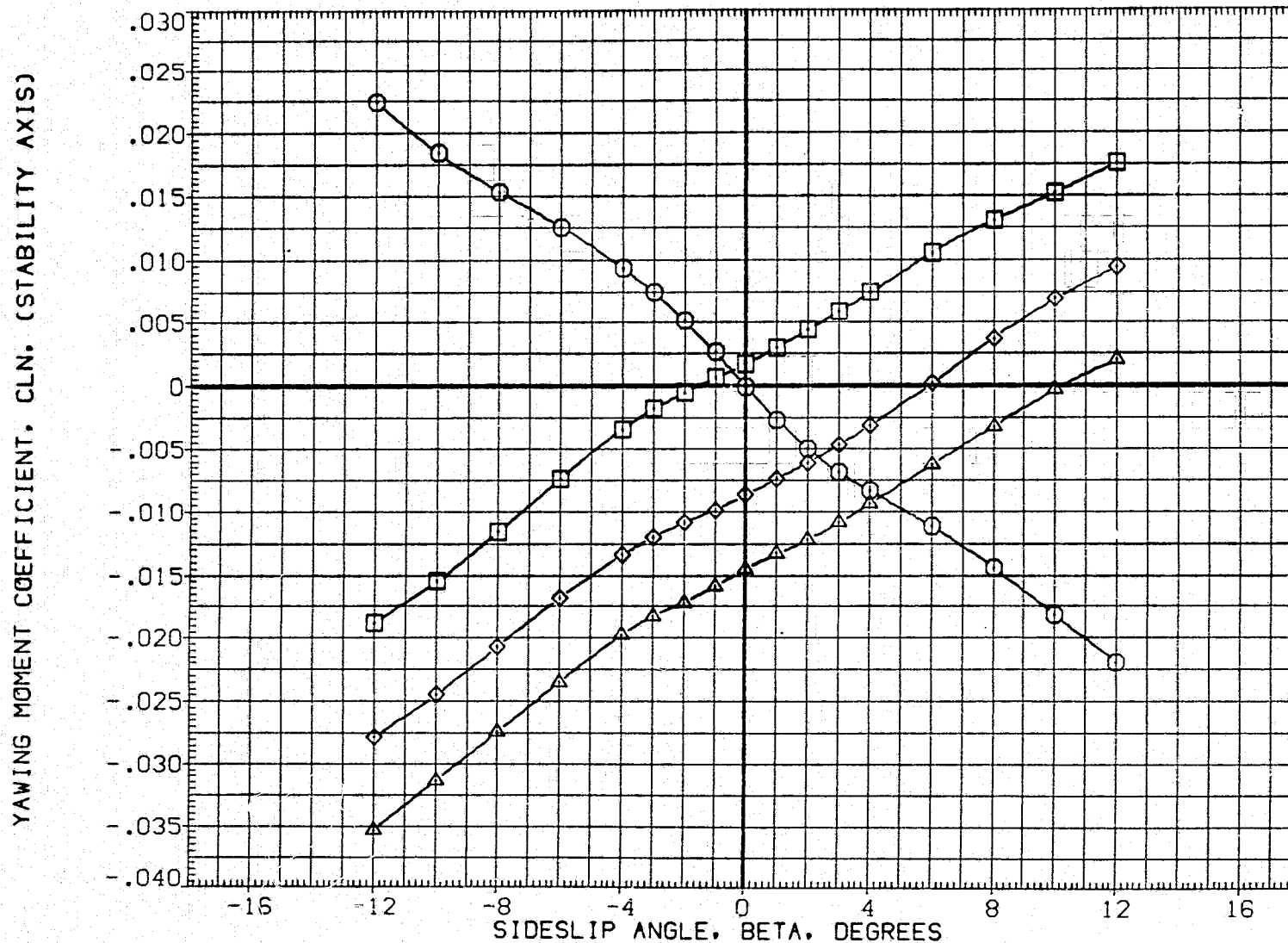


FIG. 249 747+ORB(4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA=6 DEG

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RGM105)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	-2.000			.000	SREF	5500.0000	SQ.FT.
(RGM118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	.000	.000	LREF	327.8000	IN.
(RGM124)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	BREF	2348.0000	IN.
(RGM121)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	XM RP	1339.9100	IN. XC
						YM RP	.0000	IN. YC
						ZM RP	190.7500	IN. ZC
						SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

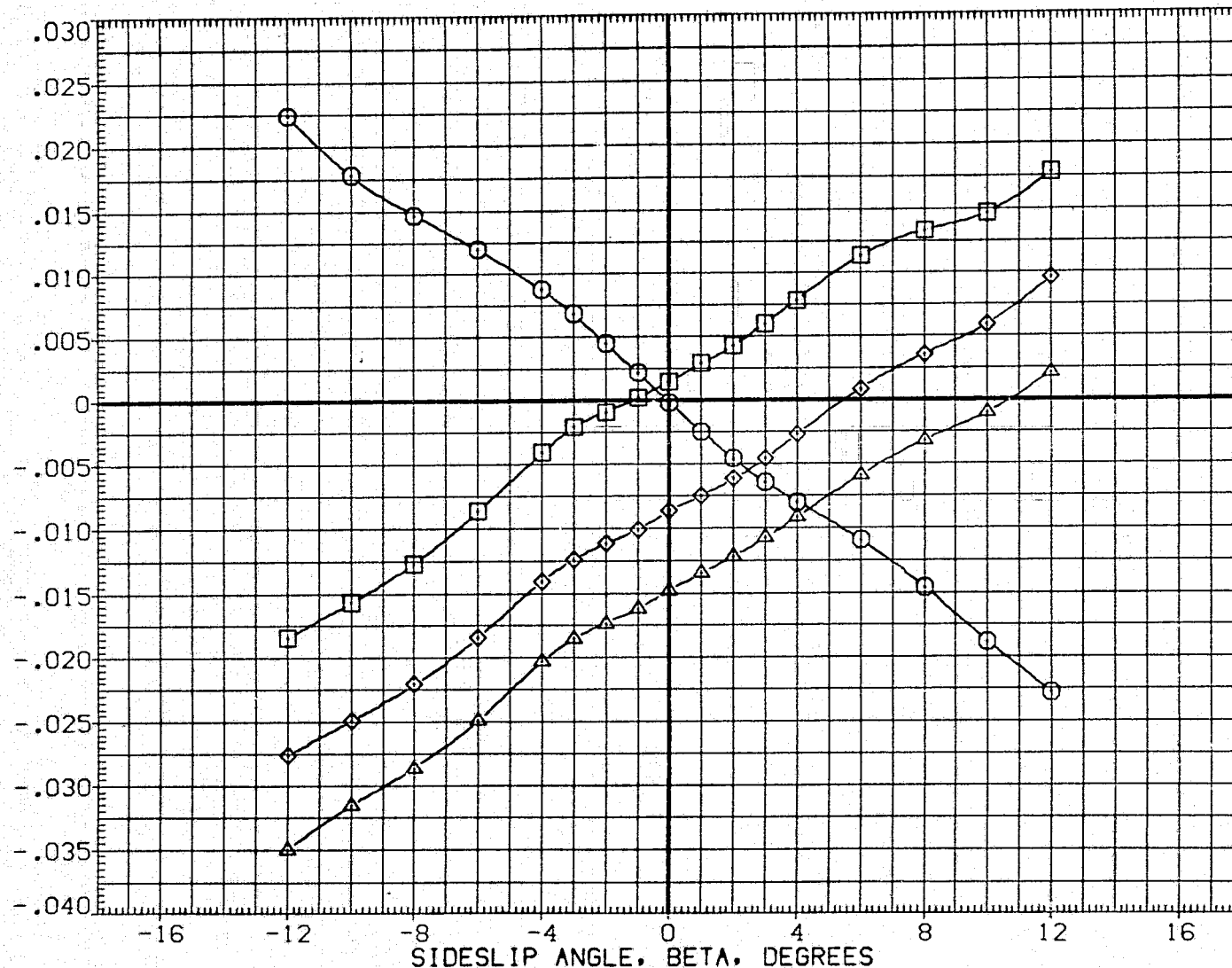


FIG. 249 747+ORB(4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA=6 DEG

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(RGM105)	CA5 KI FO H15.1A (PLUS. ORB TC5 AT38.3 )	-2.000			.000	SREF	5500.0000	50.FT.
(RGM118)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	.000	.000	LREF	327.8000	IN.
(RGM124)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	BREF	2348.0000	IN.
(RGM121)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

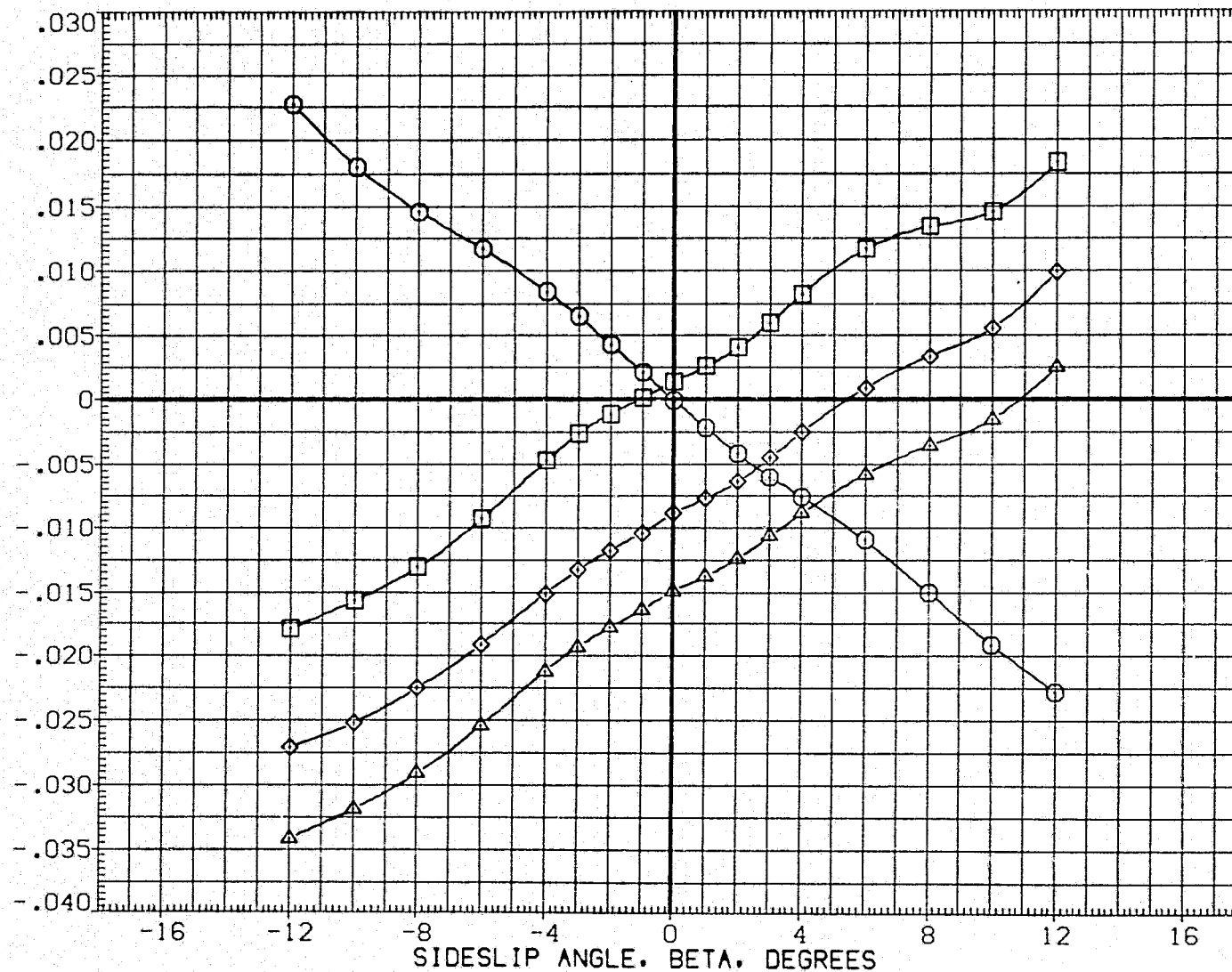


FIG. 249 747+ORB(4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA=6 DEG

(C)MACH = .60



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RGM105)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	-2.000			.000	SREF	5500.0000	SQ.FT.
(RGM118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	.000	.000	LREF	327.8000	IN.
(RGM124)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	BREF	2348.0000	IN.
(RGM121)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

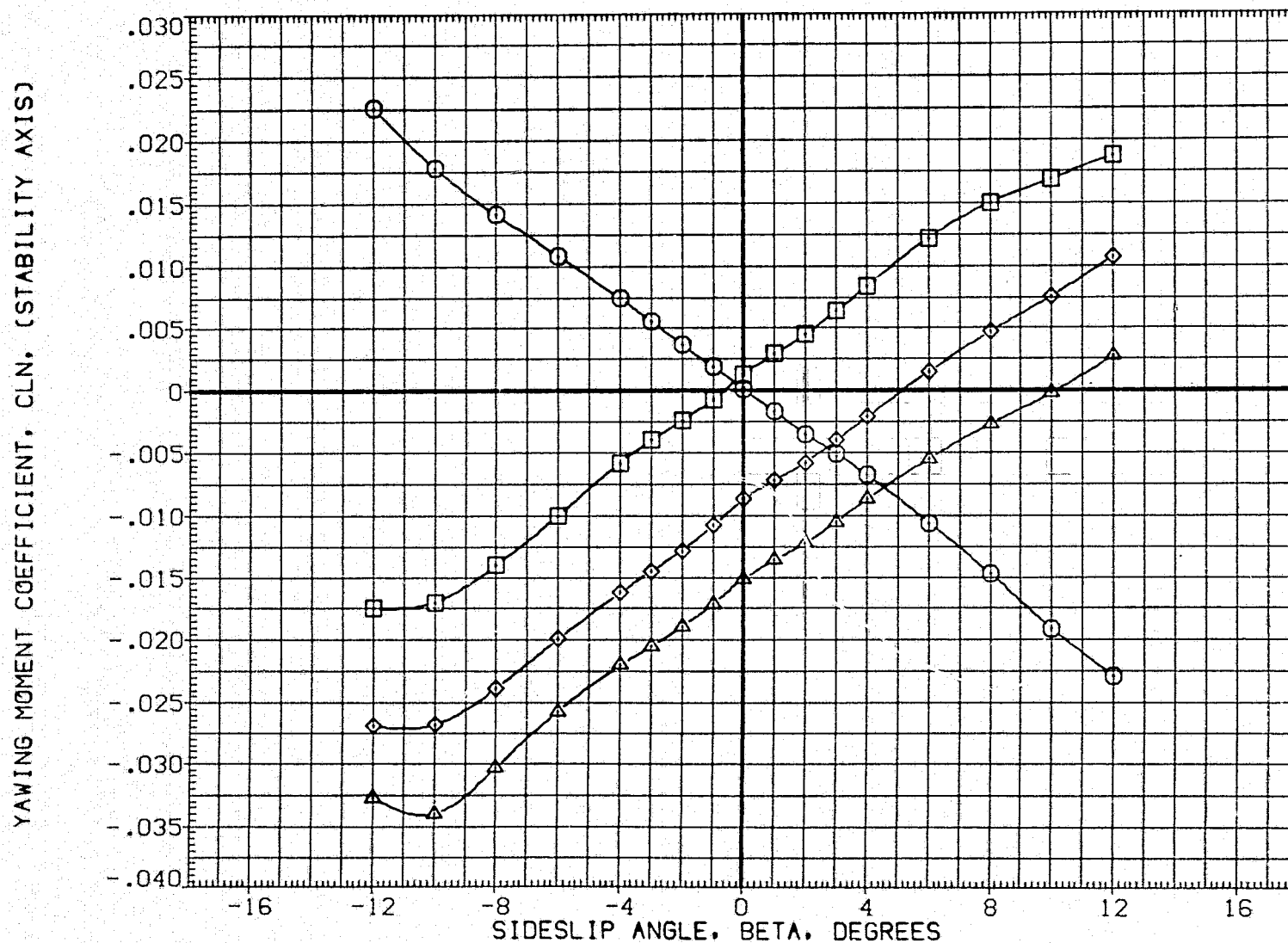


FIG. 249 747+ORB(4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA=6 DEG

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION	
(RGM105)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	-2.000			.000	SREF	5500.0000 SQ.FT.
(RGM118)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	.000	.000	LREF	327.8000 IN.
(RGM124)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	BREF	2348.0000 IN.
(RGM121)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

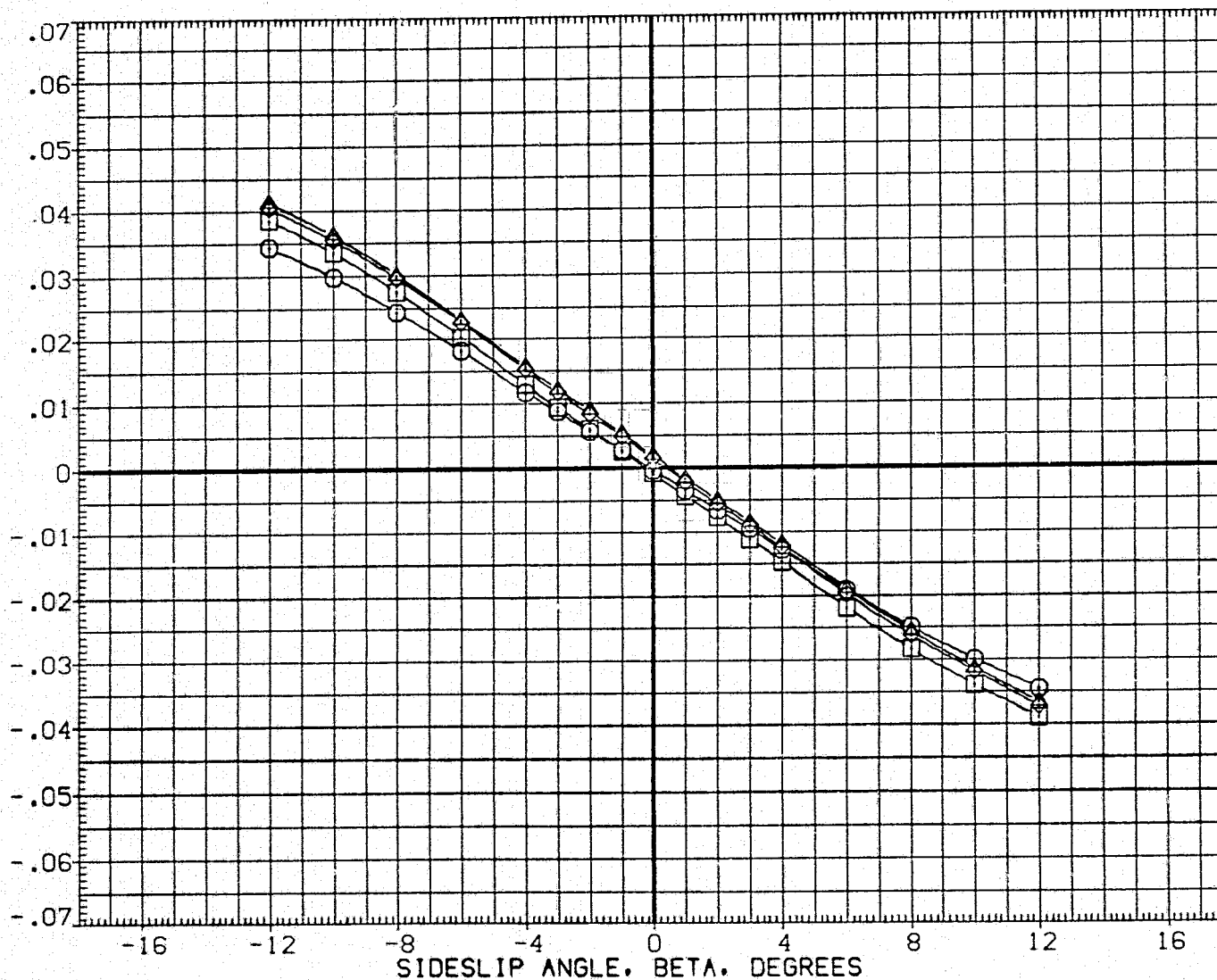


FIG. 249 747+ORB(4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA1=6 DEG

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-E	REFERENCE INFORMATION		
(RGM105)	□ CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	-2.000			.000	SREF	5500.0000	SQ.FT.
(RGM118)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	.000	.000	.000	LREF	327.8000	IN.
(RGM124)	△ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	10.000	.000	BREF	2348.0000	IN.
(RGM121)	△ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	10.000	.000	XMRF	1339.9100	IN. XC
						YMRF	.0000	IN. YC
						ZMRF	190.7500	IN. ZC
						SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

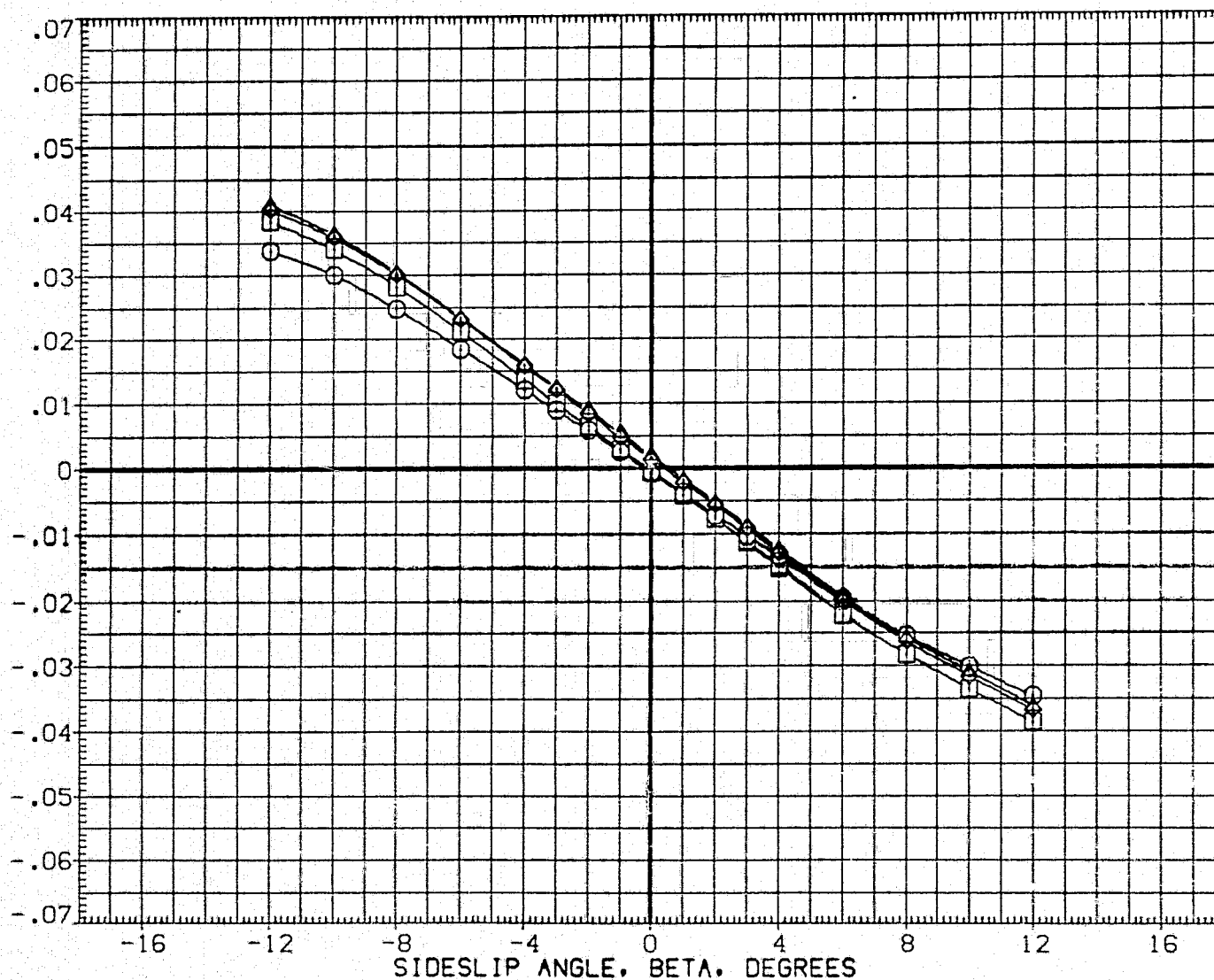


FIG. 249 747+ORB(4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA=6 DEG

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RGM105)	□ CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	-2.000			.000	SREF	5500.0000	SQ.FT.
(RGM118)	□ CAS K1 FJ H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	.000	.000	.000	LREF	327.8000	IN.
(RGM124)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	BREF	2348.0000	IN.
(RGM121)	△ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	-2.000	10.000	10.000	.000	XMRF	1339.9100	IN. XC
						YMRF	.0000	IN. YC
						ZMRF	190.7500	IN. ZC
						SCALE	.0300	

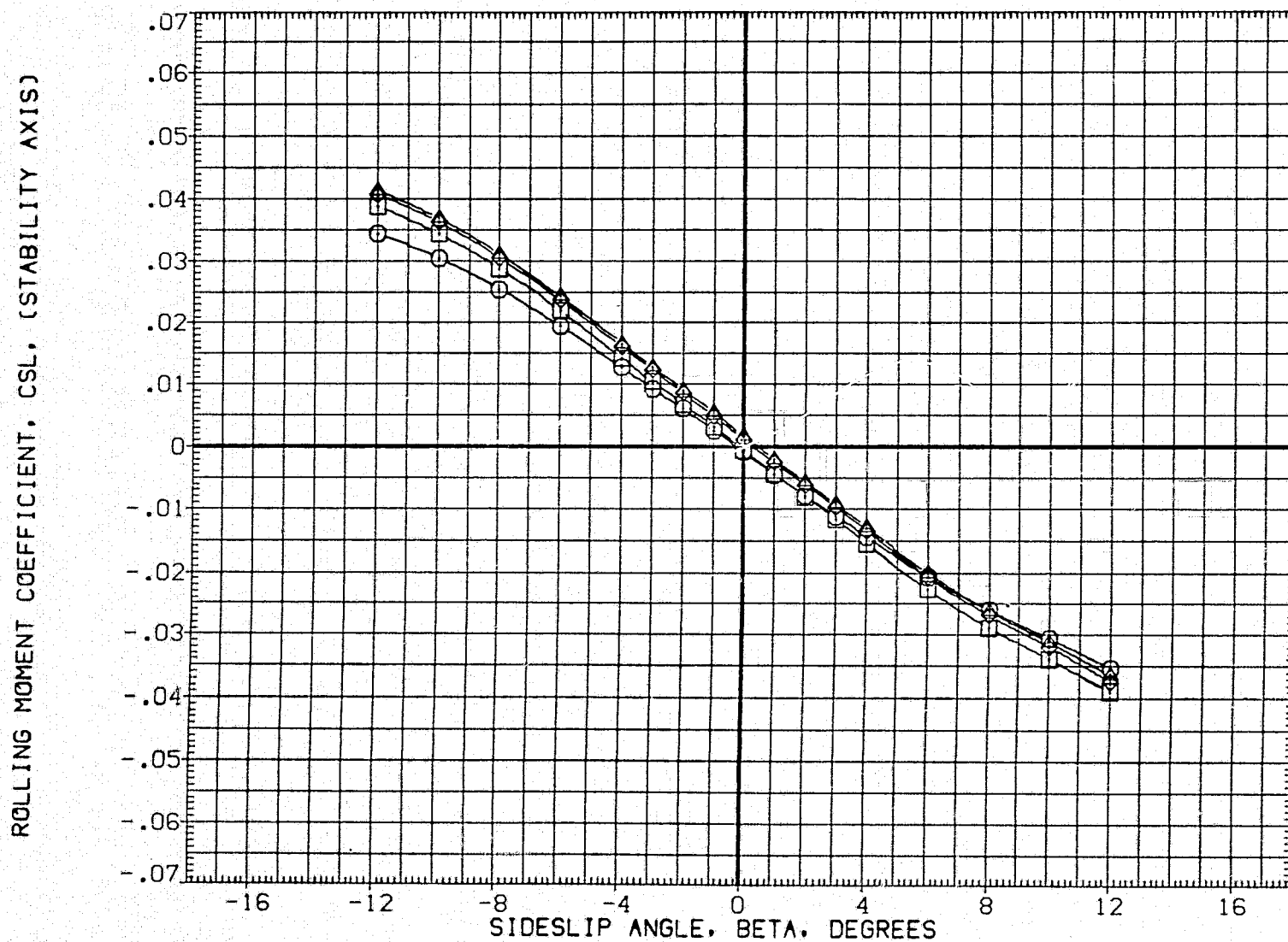


FIG. 249 747+ORB(4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA1=6 DEG

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION	
(R3M105)	CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	-2.000			.000	SREF	5500.0000 SQ.FT.
(R3M118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	.000	.000	.000	LREF	327.8000 IN.
(R3M124)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	10.000	.000	BREF	2348.0000 IN.
(R3M121)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	-2.000	10.000	10.000	.000	XM RP	1339.9100 IN. XC
						YM RP	.0000 IN. YC
						ZM RP	190.7500 IN. ZC
						SCALE	.0300

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

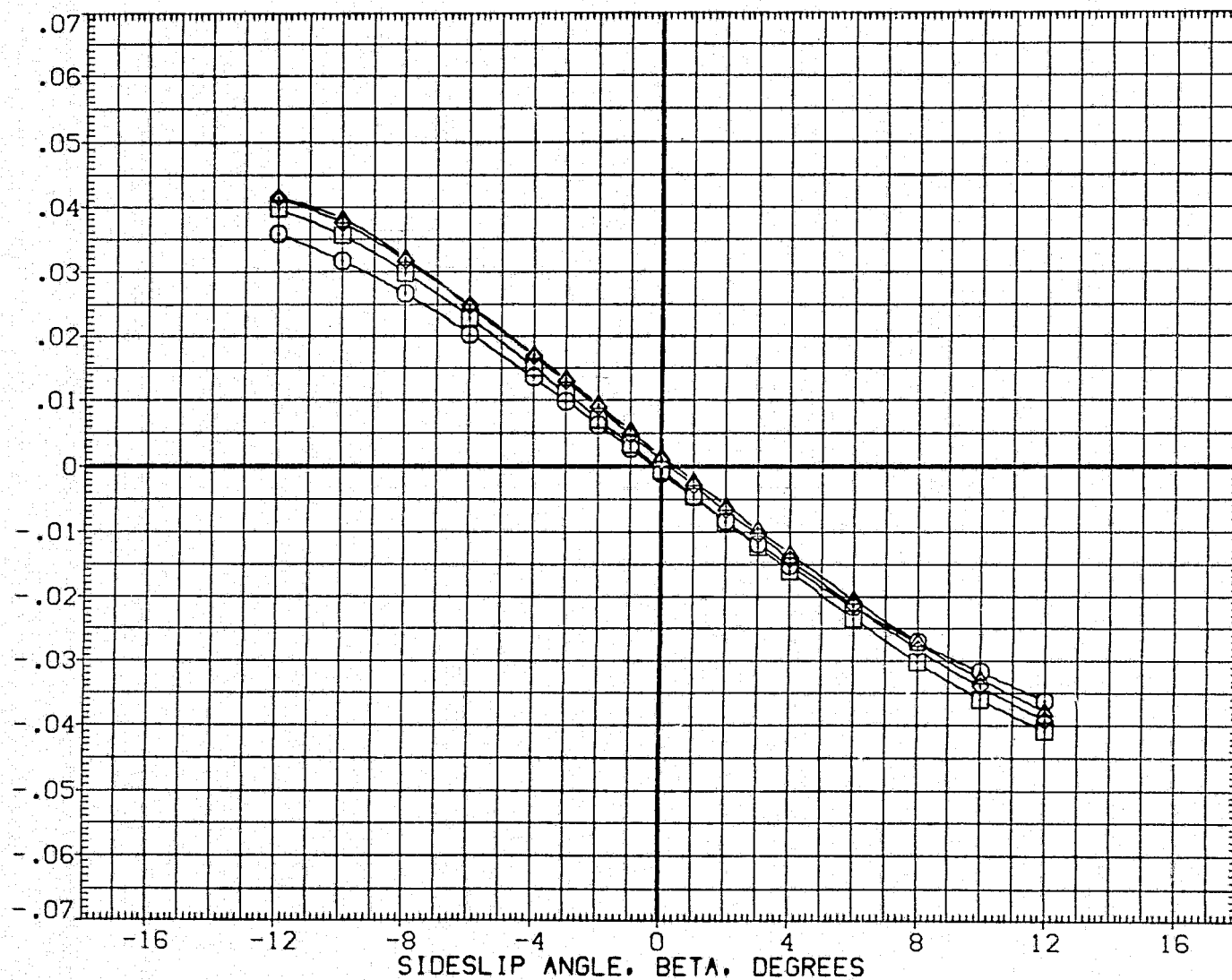


FIG. 249 747+ORB(4 DEG), RUDDER EFFECT, FLAPS UP FERRY, ALPHA1=6 DEG

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	10RB	REFERENCE INFORMATION		
[RGM104]	DATA NOT AVAILABLE	2.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
[RGM105]	CAS KI FO H15.1A (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
[RGM106]	DATA NOT AVAILABLE	8.000	-2.000	.000	4.000	BREF	2348.0000	IN.
[RGM113]	DATA NOT AVAILABLE	2.000	-3.200	.000	4.000	XMRP	1339.9100	IN. XC
[RGM114]	CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	YMRP	.0000	IN. YC
[RGM115]	DATA NOT AVAILABLE	8.000	-3.200	.000	4.000	ZMRP	190.7500	IN. ZC
						SCALE	.0300	

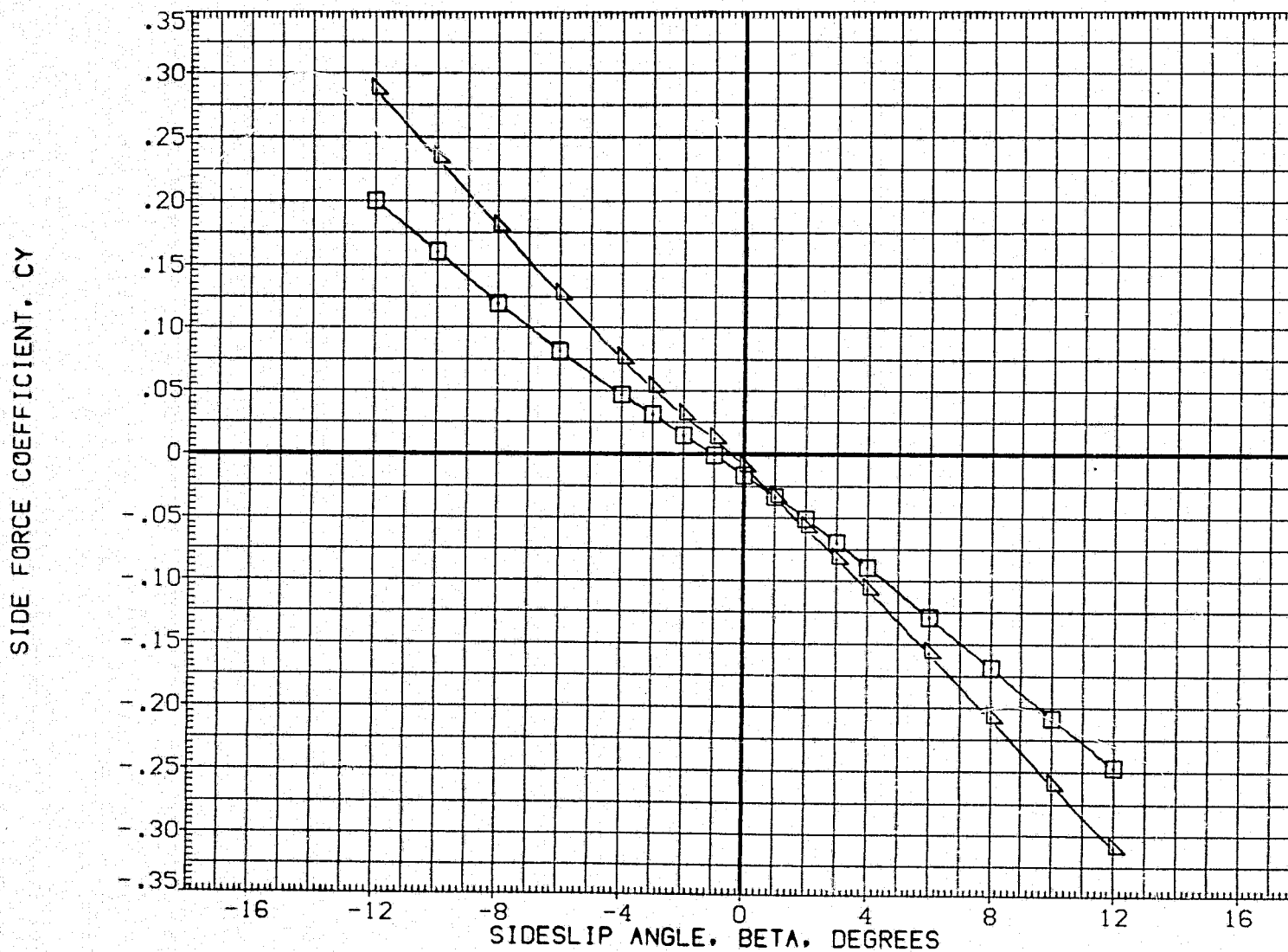


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY

(A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	S5-6	10RB	REFERENCE INFORMATION		
(RGM104)	CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	2.000	-2.000	.000	4.000	SREF	5500.0000	SO.FT.
(RGM105)	CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.6000	IN.
(RGM106)	CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	8.000	-2.000	.000	4.000	BREF	2348.0000	IN.
(RGM113)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	2.000	-3.200	.000	4.000	YMRP	1339.9100	IN. XC
(RGM114)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	YMRP	.0000	IN. YC
(RGM115)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	8.000	-3.200	.000	4.000	ZMRP	190.7500	IN. ZC
						SCALE	.0300	

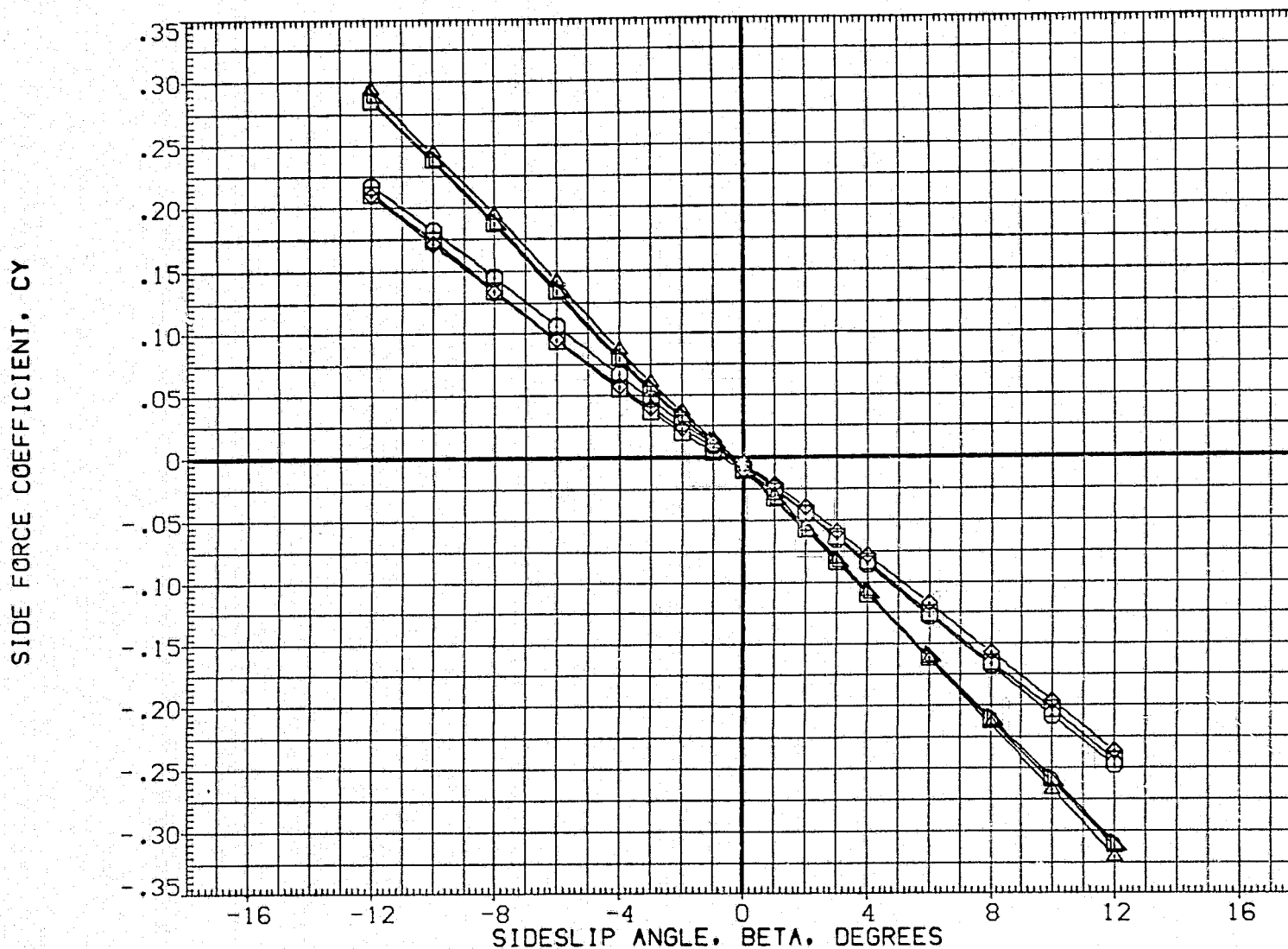


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY  
(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RSM104)	CA5 K1 FO HIS.1A (PLUS. ORB TC5 AT38.3 )	2.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RSM105)	CA5 K1 FO HIS.1A (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
(RSM106)	CA5 K1 FO HIS.1A (PLUS. ORB TC5 AT38.3 )	8.000	-2.000	.000	4.000	BREF	2348.0000	IN.
(RSM113)	CA5 K1 FO HIS.6 V9.1 (PLUS. ORB TC5 AT38.3 )	2.000	-3.200	.000	4.000	XMRF	1339.9100	IN. XC
(RSM114)	CA5 K1 FO HIS.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	YMRF	.0000	IN. YC
(RSM115)	CA5 K1 FO HIS.6 V9.1 (PLUS. ORB TC5 AT38.3 )	8.000	-3.200	.000	4.000	ZMRF	190.7500	IN. ZC
						SCALE	.0300	

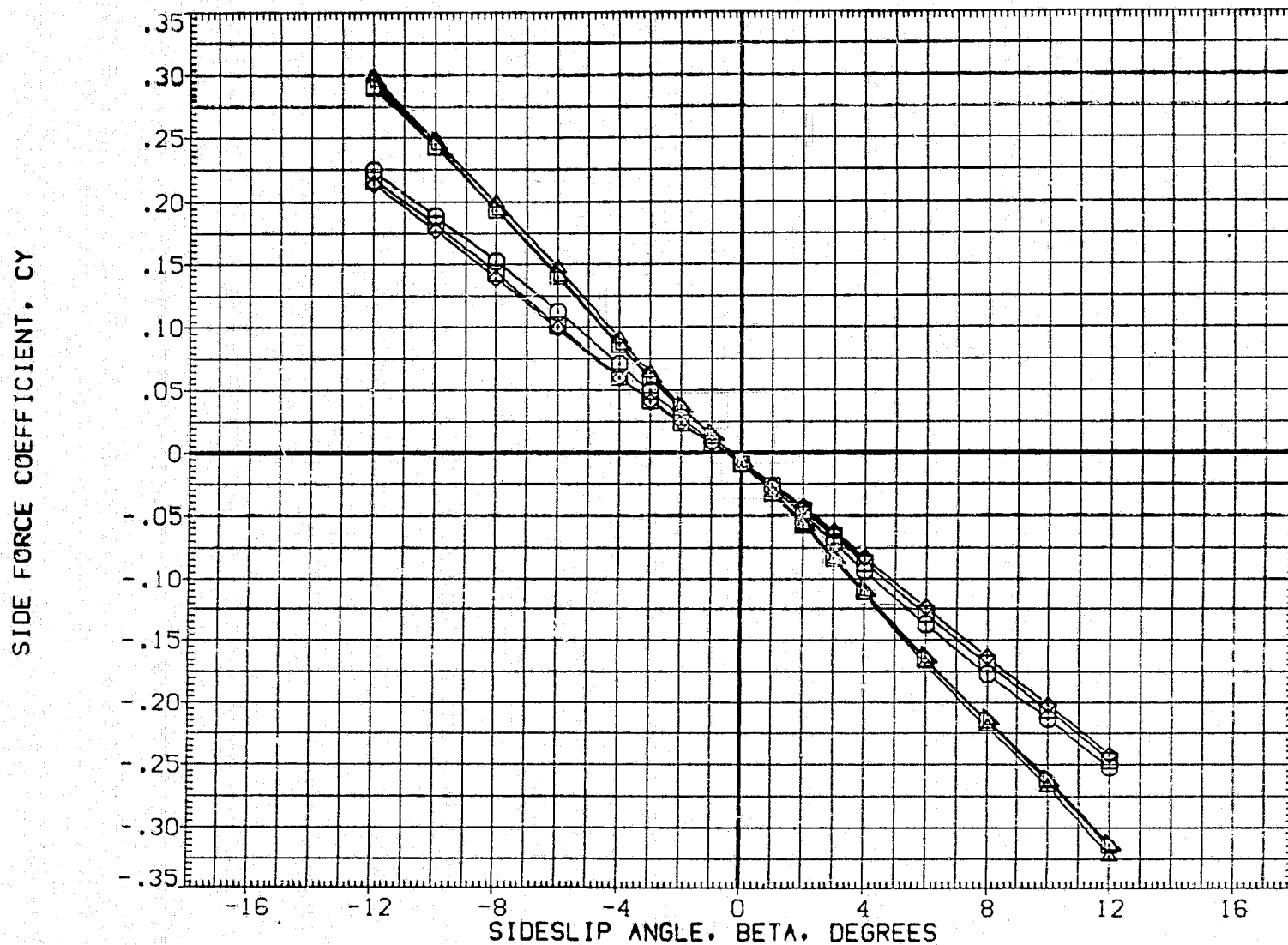


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY

(C)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	IORB	REFERENCE INFORMATION		
(RGM104)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.3)	2.000	-2.000	.000	4.000	SREF	5500.0000	50.FT.
(RGM105)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.3)	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
(RGM106)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.3)	8.000	-2.000	.000	4.000	BREF	2348.0000	IN.
(RGM113)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	2.000	-3.200	.000	4.000	XMRP	1339.9100	IN. XC
(RGM114)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	6.000	-3.200	.000	4.000	YMRP	.0000	IN. YC
(RGM115)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	8.000	-3.200	.000	4.000	ZMRP	190.7500	IN. ZC
						SCALE	.0300	

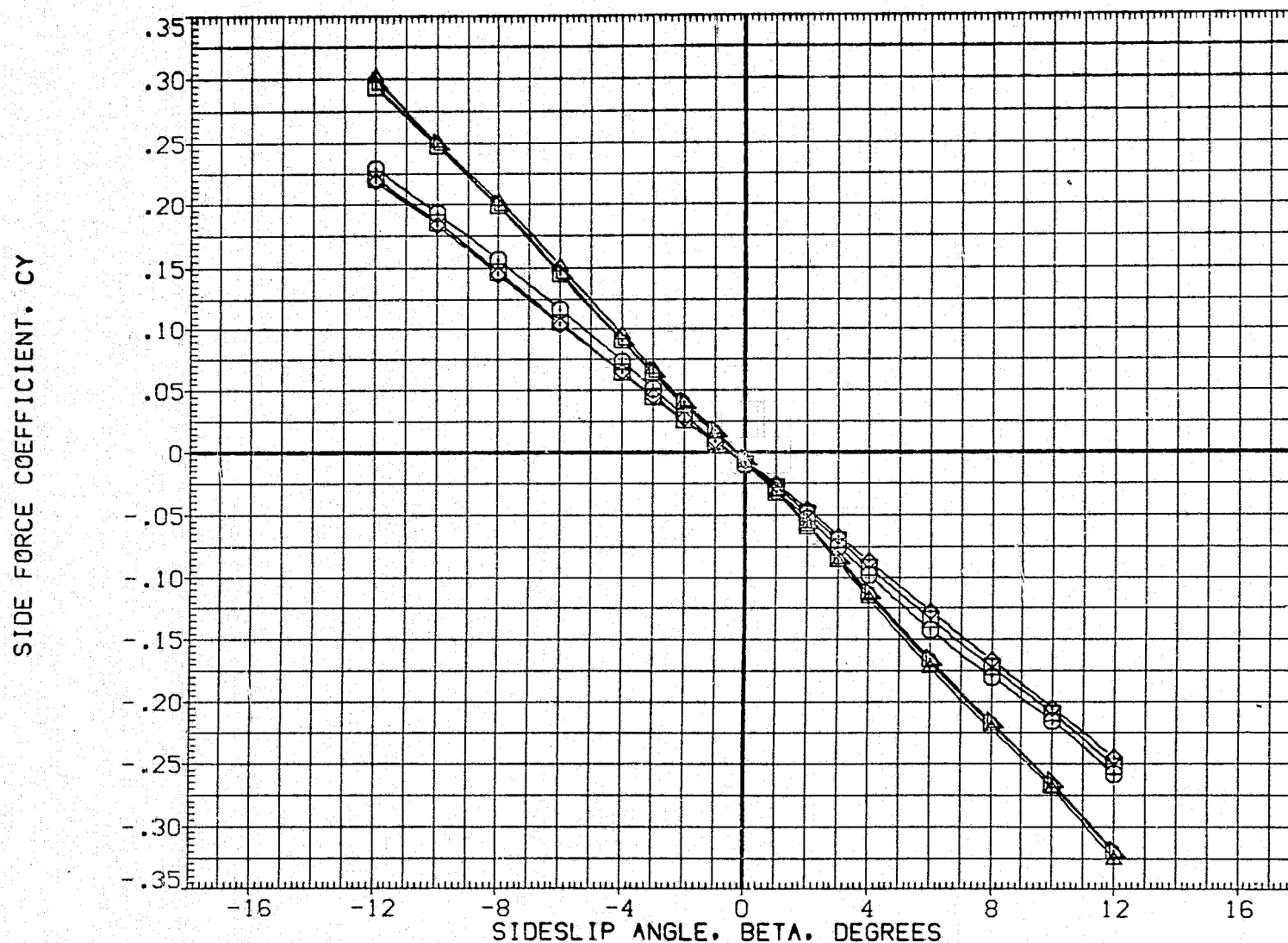


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY

(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGM104)	CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3)	2.000	-2.000	.000	4.000	SREF	5500.0000	50. FT.
(RGM105)	CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3)	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
(RGM106)	CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3)	8.000	-2.000	.000	4.000	BREF	2348.0000	IN.
(RGM113)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	2.000	-3.200	.000	4.000	XMRP	1339.9100	IN. XC
(RGM114)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	6.000	-3.200	.000	4.000	YMRP	.0000	IN. YC
(RGM115)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	8.000	-3.200	.000	4.000	ZMRP	190.7500	IN. ZC
						SCALE	.0300	

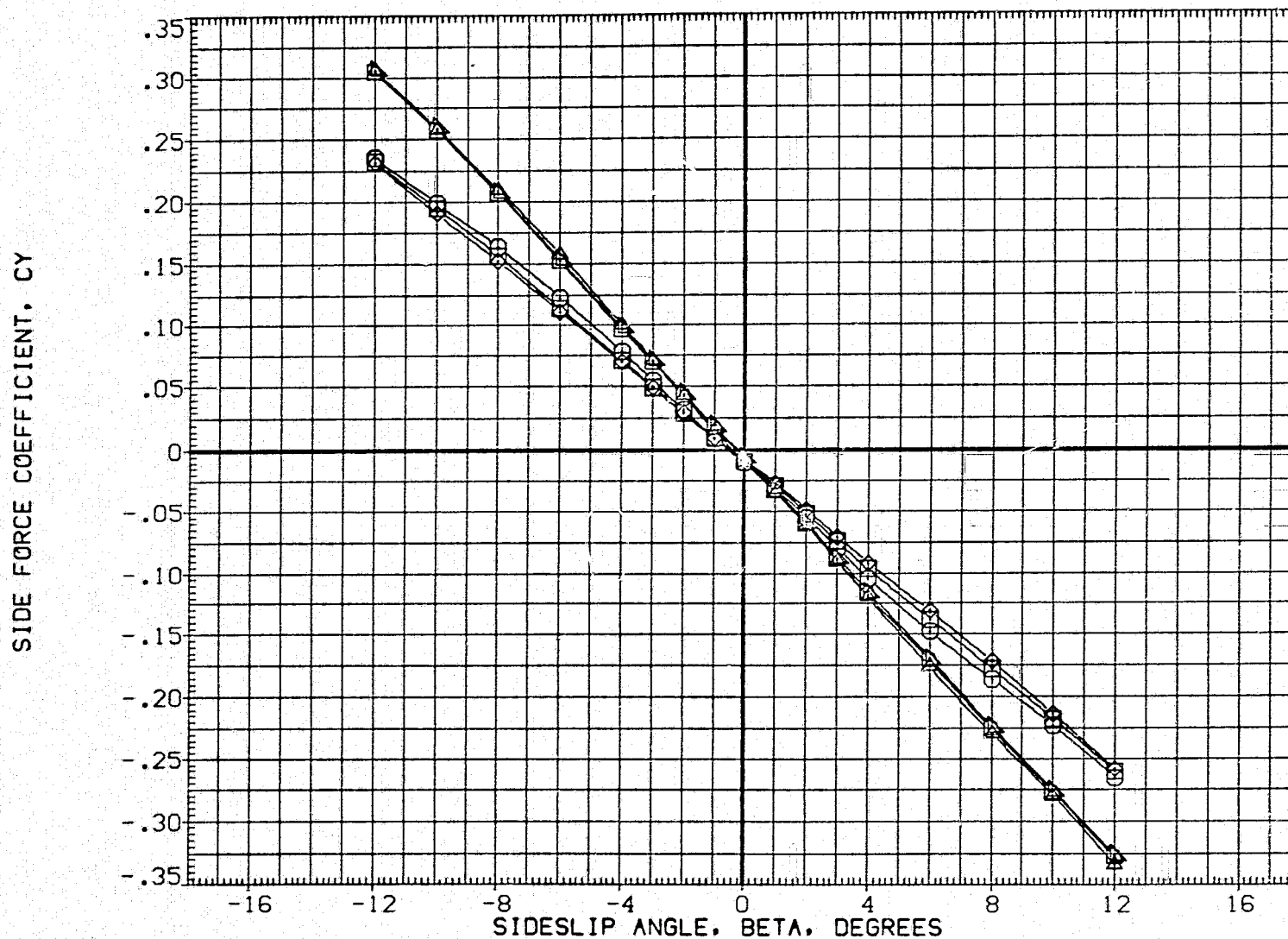


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY

(E)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	IORB	REFERENCE INFORMATION		
(RGM104)	DATA NOT AVAILABLE	2.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM105)	CAS K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
(RGM106)	DATA NOT AVAILABLE	8.000	-2.000	.000	4.000	BREF	2348.0000	IN.
(RGM113)	DATA NOT AVAILABLE	2.000	-3.200	.000	4.000	XMRP	1339.9100	IN. XC
(RGM114)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	YMRP	.0000	IN. YC
(RGM115)	DATA NOT AVAILABLE	8.000	-3.200	.000	4.000	ZMRP	190.7500	IN. ZC
						SCALE	.0300	

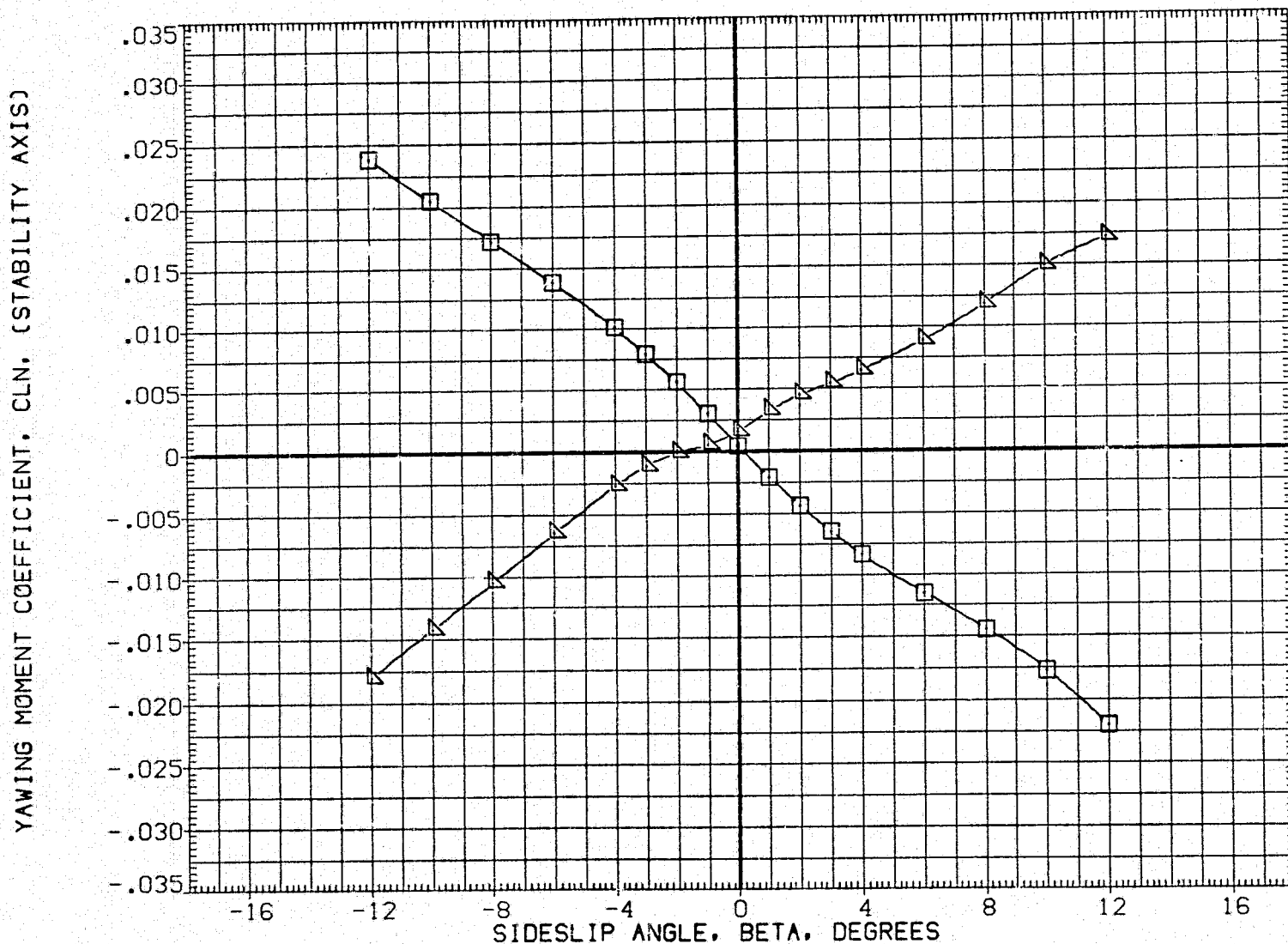


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY

(A)MACH = .15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	ICRB	REFERENCE INFORMATION		
(RGM104)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	2.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM105)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
(RGM106)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	8.000	-2.000	.000	4.000	BREF	2348.0000	IN.
(RGM113)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	2.000	-3.200	.000	4.000	XMRF	1339.9100	IN. XC
(RGM114)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	YMRF	.0000	IN. YC
(RGM115)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	8.000	-3.200	.000	4.000	ZMRF	190.7500	IN. ZC
						SCALE	.0300	

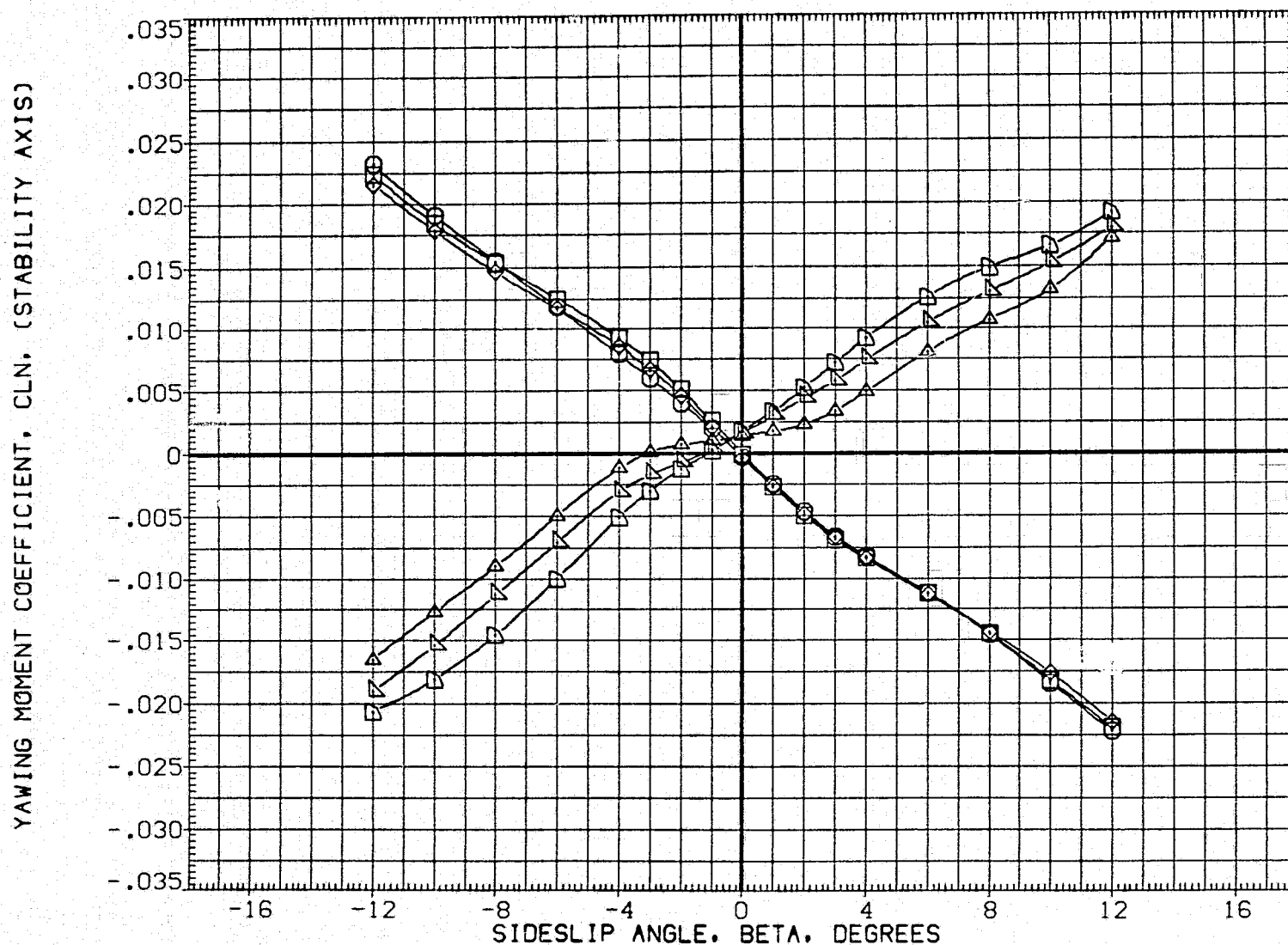


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY

(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	S5-6	10RB	REFERENCE INFORMATION
(RGM104)	CA5 K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	2.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT.
(RGM105)	CA5 K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	LREF 327.8000 IN.
(RGM106)	CA5 K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	8.000	-2.000	.000	4.000	BREF 2348.0000 IN.
(RGM113)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	2.000	-3.200	.000	4.000	XMRP 1339.9100 IN. XC
(RGM114)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	YMRP .0000 IN. YC
(RGM115)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	8.000	-3.200	.000	4.000	ZMRP 190.7500 IN. ZC
						SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

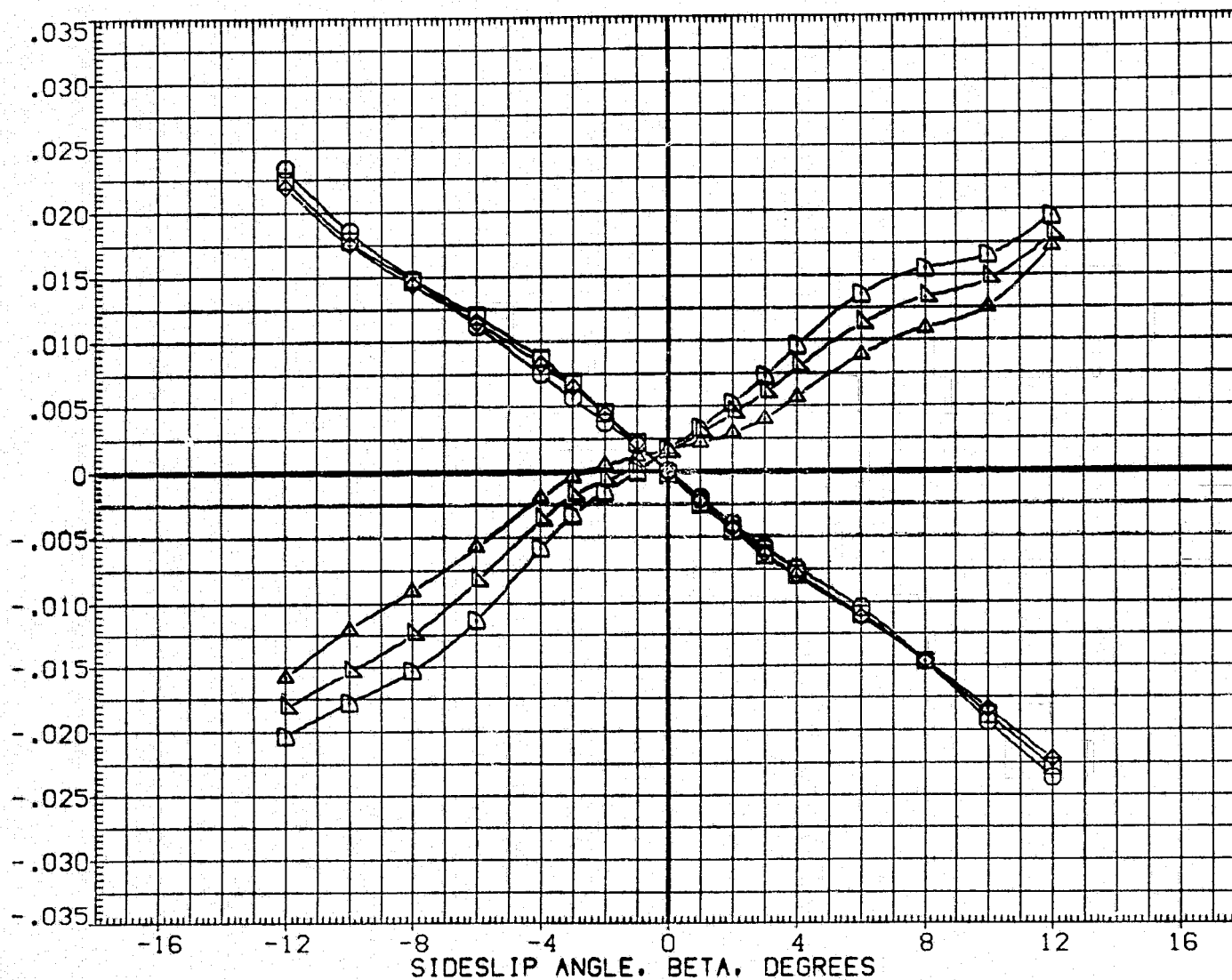


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY  
(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	10RB	REFERENCE INFORMATION		
(RGM104)	CA5 K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	2.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM105)	CA5 K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
(RGM106)	CA5 K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	8.000	-2.000	.000	4.000	BREF	2348.0000	IN.
(RGM113)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	2.000	-3.200	.000	4.000	XMRP	1339.9100	IN. XC
(RGM114)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	YMRP	.0000	IN. YC
(RGM115)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	8.000	-3.200	.000	4.000	ZMRP	190.7500	IN. ZC
						SCALE	.0300	

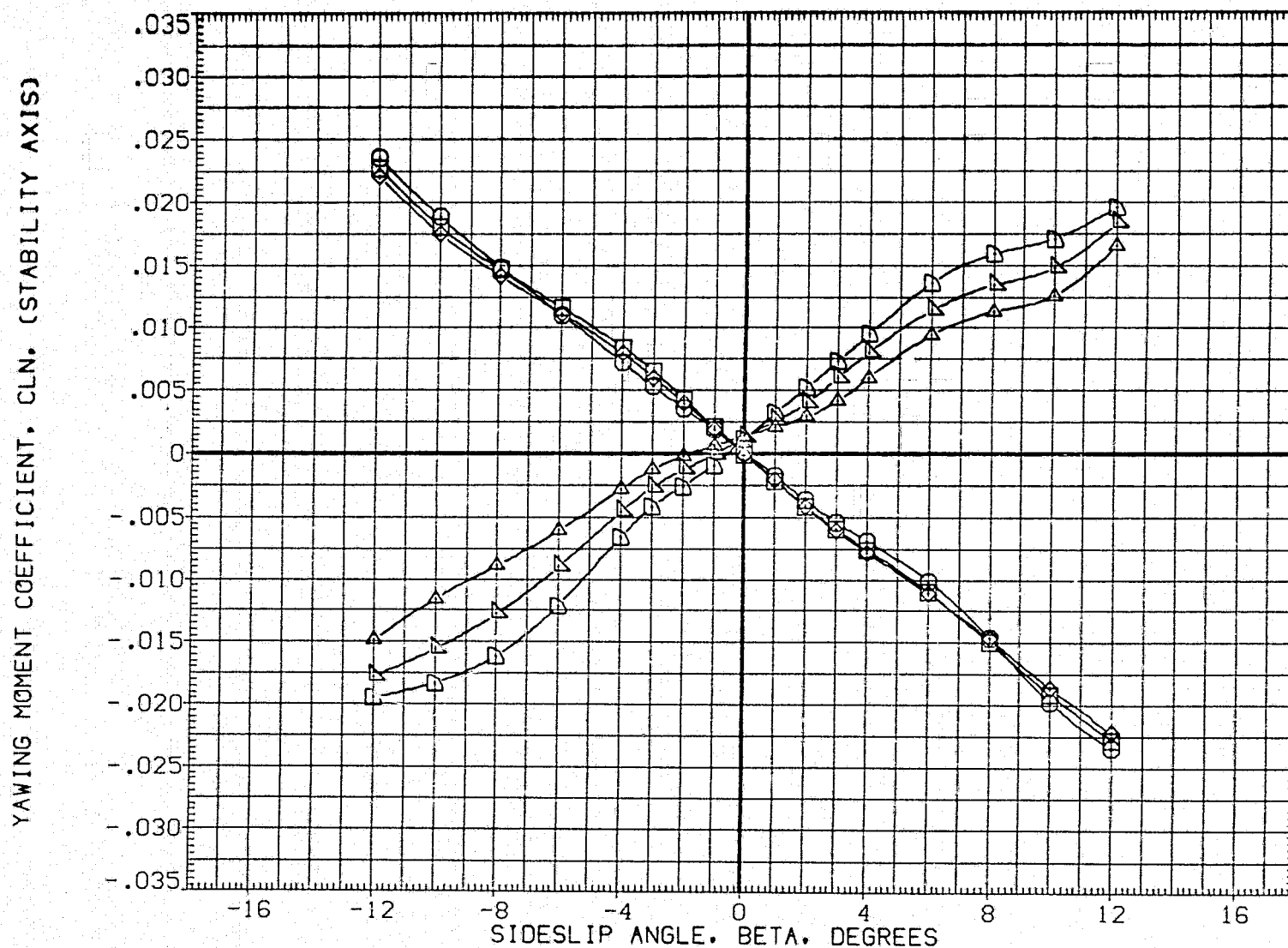


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY

(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION
(RGM104)	CA5 K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	2.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT.
(RGM105)	CA5 K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	LREF 327.8000 IN.
(RGM106)	CA5 K1 FO H15.1A (PLUS. ORB TCS AT38.3 )	8.000	-2.000	.000	4.000	BREF 2348.0000 IN.
(RGM113)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	2.000	-3.200	.000	4.000	XMRP 1339.9100 IN. XC
(RGM114)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	YMRP .0000 IN. YC
(RGM115)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	8.000	-3.200	.000	4.000	ZMRP 190.7500 IN. ZC
						SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

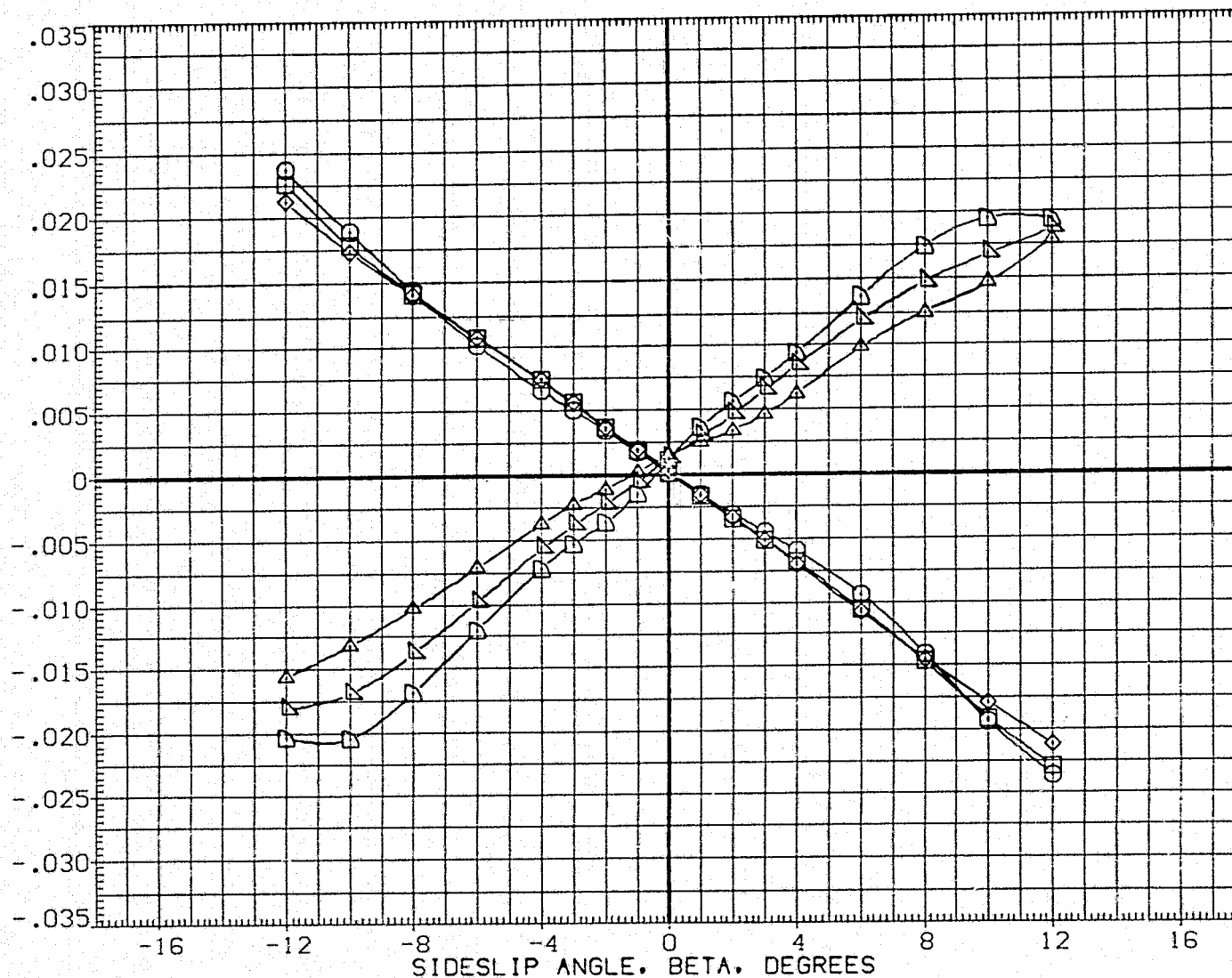


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY  
(E)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RMI04)	DATA NOT AVAILABLE
(RMI05)	CAS KI FO H15.1A (PLUS. ORB TC5 AT38.3)
(RMI06)	DATA NOT AVAILABLE
(RMI13)	DATA NOT AVAILABLE
(RMI14)	CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)
(RMI15)	DATA NOT AVAILABLE

ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION	
2.000	-2.000	.000	4.000	SREF	5500.0000 SQ.FT.
6.000	-2.000	.000	4.000	LREF	327.8000 IN.
8.000	-2.000	.000	4.000	BREF	2348.0000 IN.
2.000	-3.200	.000	4.000	XMRP	1339.9100 IN. XC
6.000	-3.200	.000	4.000	YMRP	.0000 IN. YC
8.000	-3.200	.000	4.000	ZMRP	190.7500 IN. ZC
				SCALE	.0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

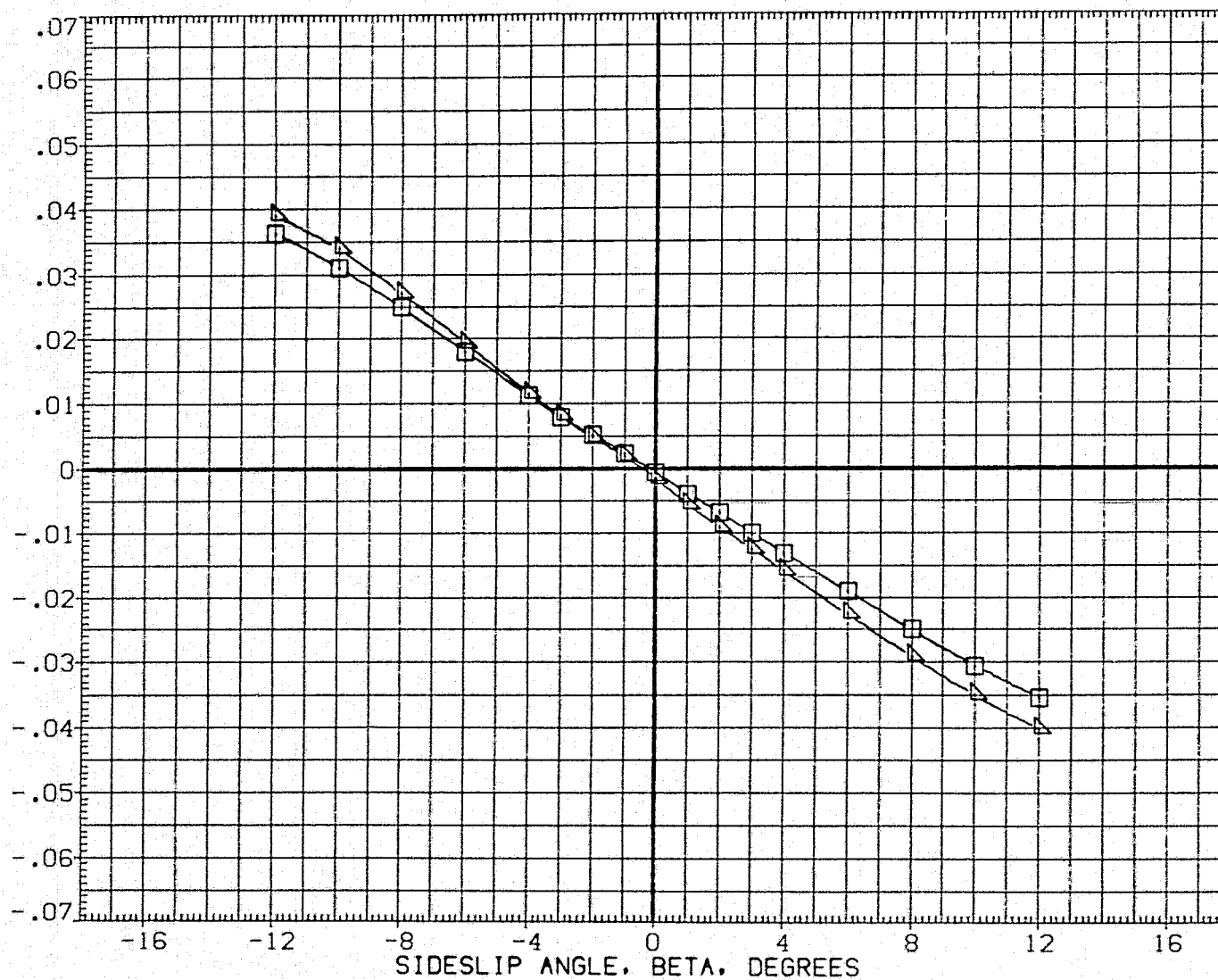


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY

(A)MACH = .15

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGM104)	CAS KI FO HIS.1A (PLUS. ORB TCS AT38.3 )	2.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM105)	CAS KI FO HIS.1A (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
(RGM106)	CAS KI FO HIS.1A (PLUS. ORB TCS AT38.3 )	8.000	-2.000	.000	4.000	BREF	2346.0000	IN.
(RGM113)	CAS KI FO HIS.6 V9.1 (PLUS. ORB TCS AT38.3 )	2.000	-3.200	.000	4.000	XMRP	1339.9100	IN. XC
(RGM114)	CAS KI FO HIS.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-3.200	.000	4.000	YMRP	.0000	IN. YC
(RGM115)	CAS KI FO HIS.6 V9.1 (PLUS. ORB TCS AT38.3 )	8.000	-3.200	.000	4.000	ZMRP	190.7500	IN. ZC
						SCALE	.0300	

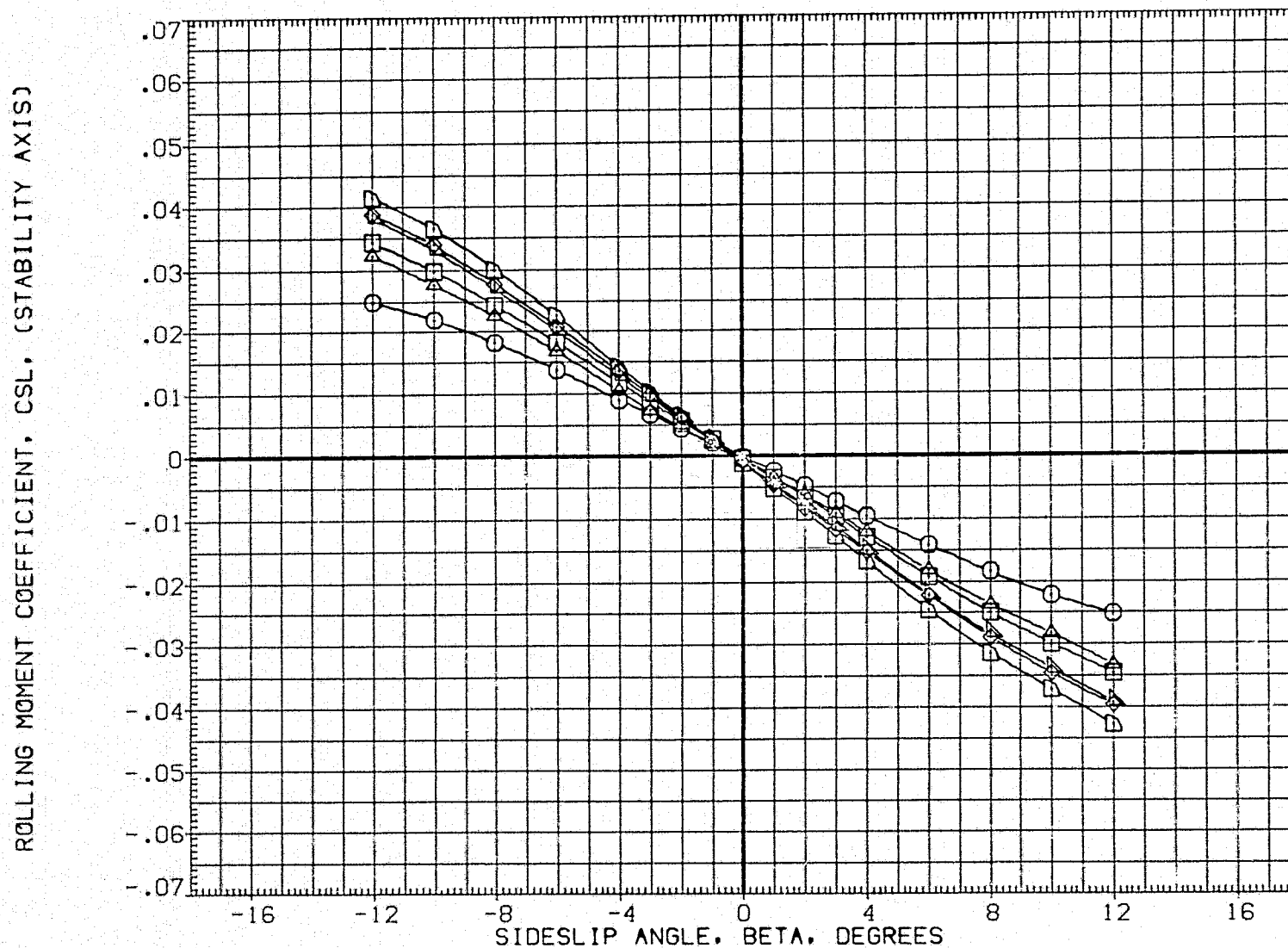


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY  
(B)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGM104)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	2.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM105)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
(RGM106)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	8.000	-2.000	.000	4.000	BREF	2348.0000	IN.
(RGM113)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	2.000	-3.200	.000	4.000	XMRP	1339.9100	IN. XC
(RGM114)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	YMRP	.0000	IN. YC
(RGM115)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	8.000	-3.200	.000	4.000	ZMRP	190.7500	IN. ZC
						SCALE	.0300	

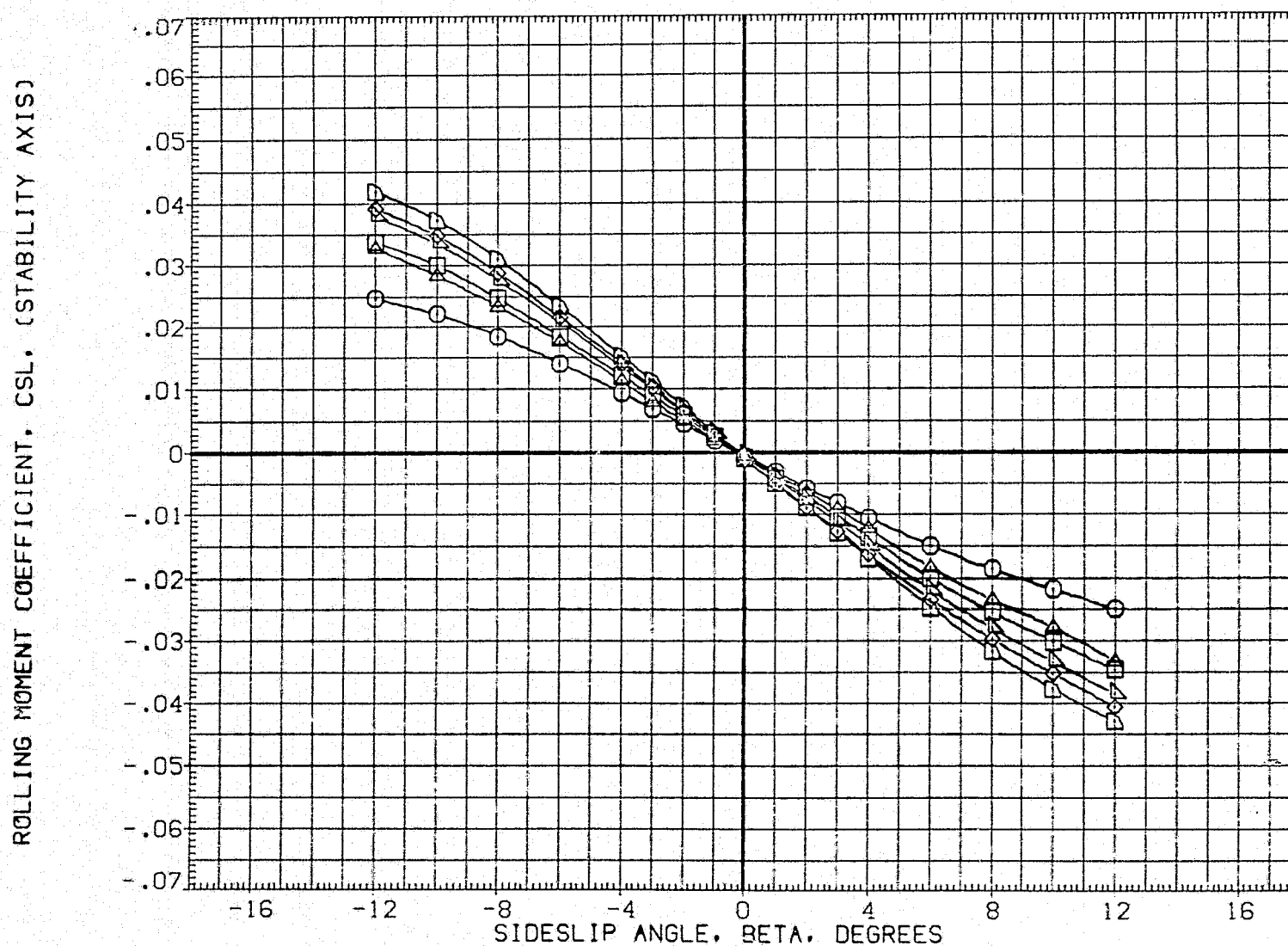


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY  
(C)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGM104)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	2.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM105)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
(RGM106)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.3 )	8.000	-2.000	.000	4.000	BREF	2348.0000	IN.
(RGM113)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	2.000	-3.200	.000	4.000	XM RP	1339.9100	IN. XC
(RGM114)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-3.200	.000	4.000	YM RP	.0000	IN. YC
(RGM115)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	8.000	-3.200	.000	4.000	ZM RP	190.7500	IN. ZC
						SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

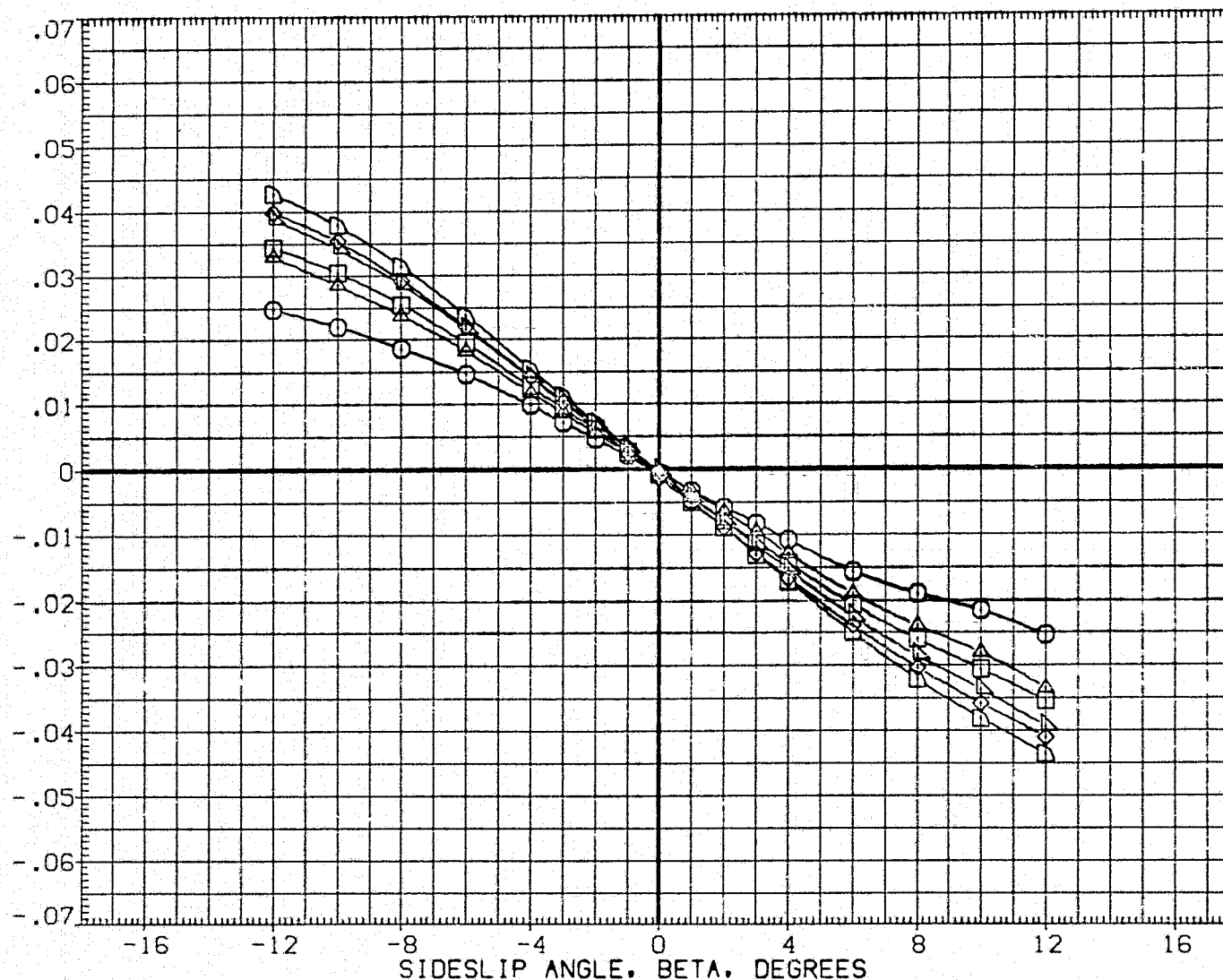


FIG. 250 747+ORB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY  
(D)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	10RB	REFERENCE INFORMATION
(RGM104)	CAS K1 FO HIS.1A (PLUS. ORB TCS AT38.3)	2.000	-2.000	.000	4.000	SREF 5500.0000 SQ.F.T.
(RGM105)	CAS K1 FO HIS.1A (PLUS. ORB TCS AT38.3)	6.000	-2.000	.000	4.000	LREF 327.8000 IN.
(RGM106)	CAS K1 FO HIS.1A (PLUS. ORB TCS AT38.3)	8.000	-2.000	.000	4.000	BREF 2348.0000 IN.
(RGM113)	CAS K1 FO HIS.6 V9.1 (PLUS. ORB TCS AT38.3)	2.000	-3.200	.000	4.000	XMRP 1338.9100 IN. XC
(RGM114)	CAS K1 FO HIS.6 V9.1 (PLUS. ORB TCS AT38.3)	6.000	-3.200	.000	4.000	YMRP .0000 IN. YC
(RGM115)	CAS K1 FO HIS.6 V9.1 (PLUS. ORB TCS AT38.3)	8.000	-3.200	.000	4.000	ZMRP 190.7500 IN. ZC
						SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

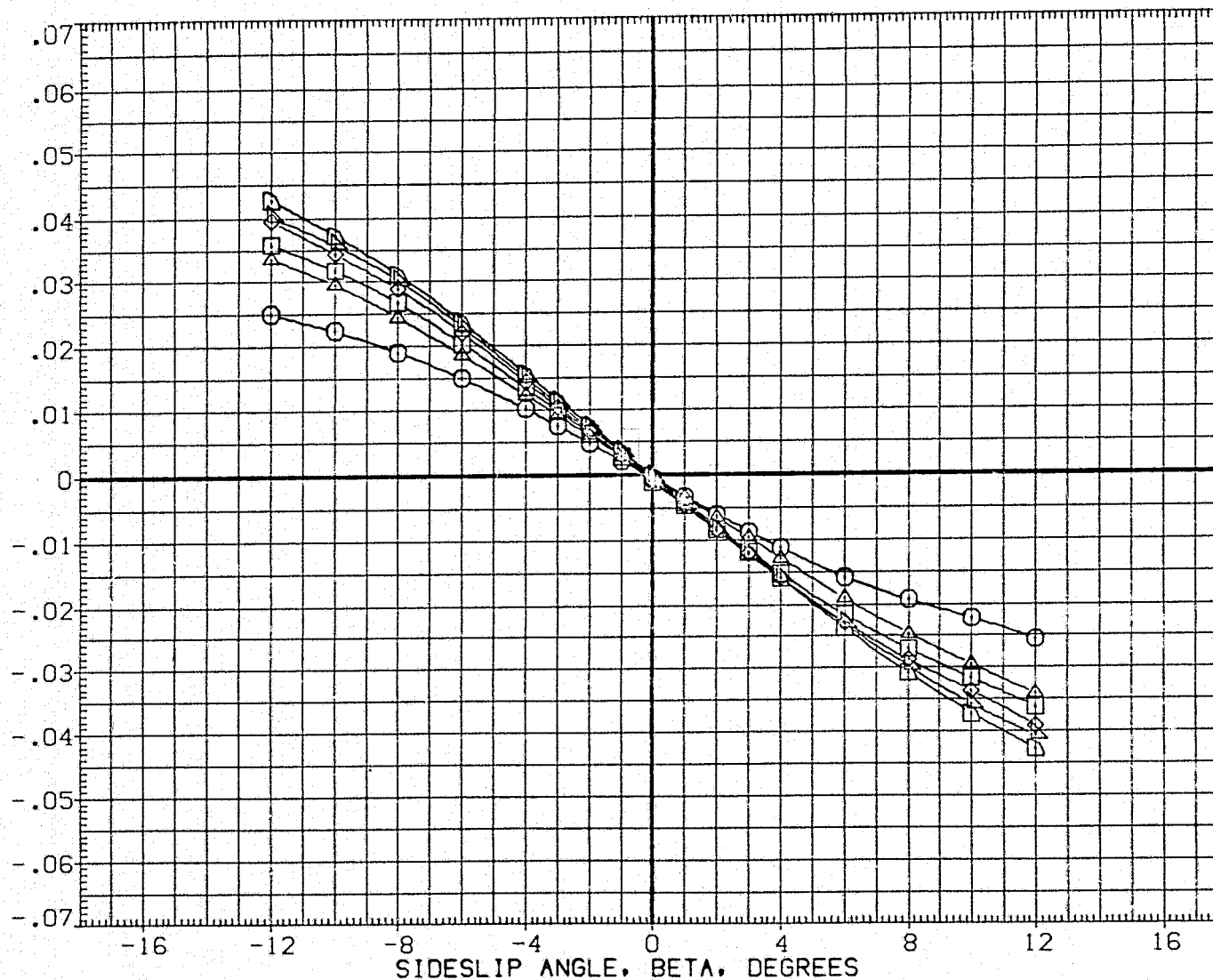


FIG. 250 747+0RB(4 DEG), EFFECT OF ALPHA, FLAPS UP FERRY

(E)MACH = .70

DA A SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(RGM103)	○ CA5 KI FO H15.1A (PLUS. ORB TC5 AT38.2A)	1.000			20.000	SREF	5500.0000	SQ.FT.
(RGM083)	□ CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	.000	.000	20.000	LREF	327.8000	IN.
(RGM086)	◇ CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	10.000	10.000	20.000	BREF	2349.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

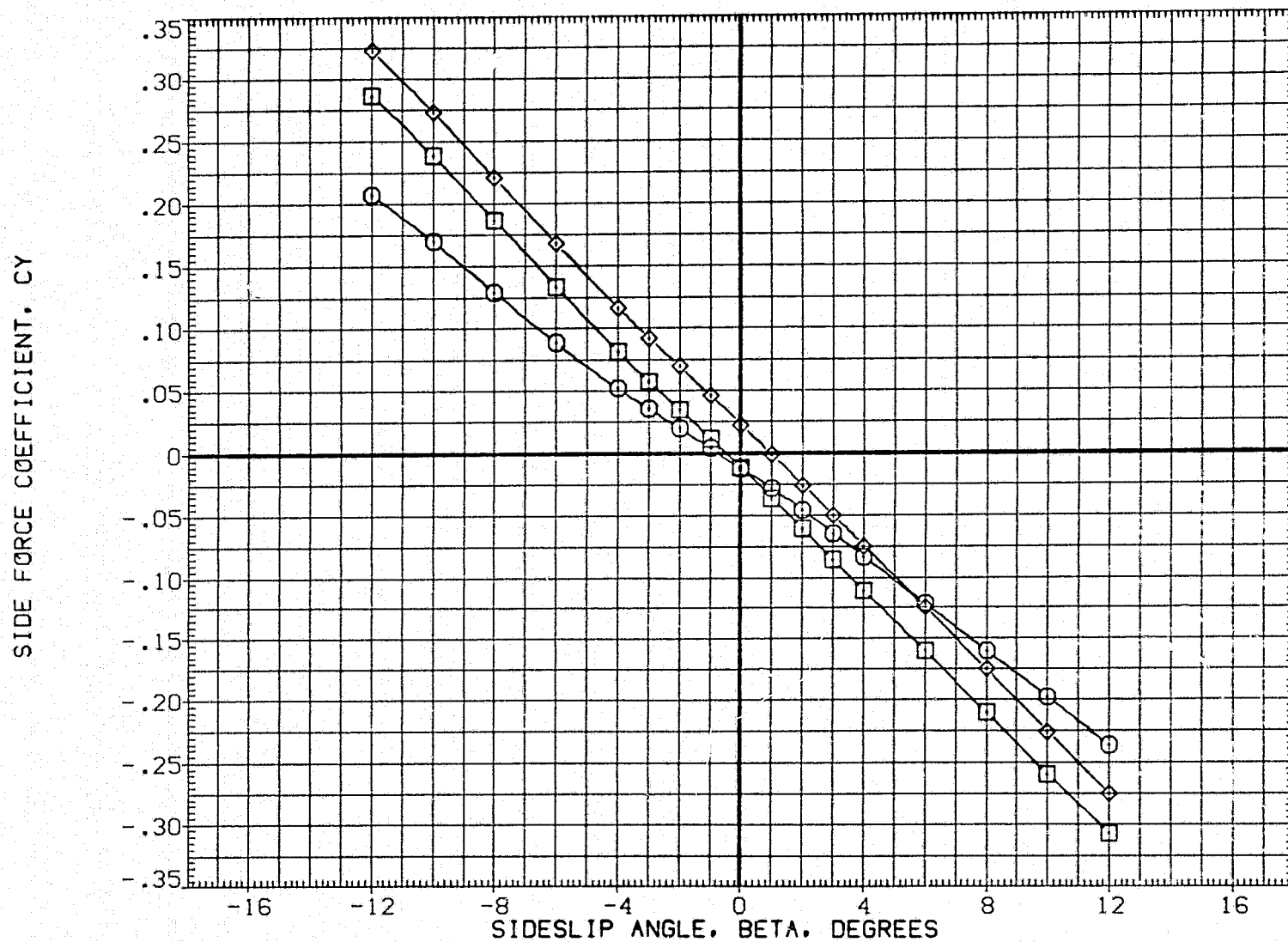


FIG. 251 747+ORB(8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA=6 DEG

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RGM103)	○ CAS K1 FO H15.1A (PLUS. ORB TCS AT38.2A)	1.000			20.000	SREF	5500.0000	SQ.FT.
(RGM083)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	.000	.000	20.000	LREF	327.8000	IN.
(RGM086)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	10.000	10.000	20.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

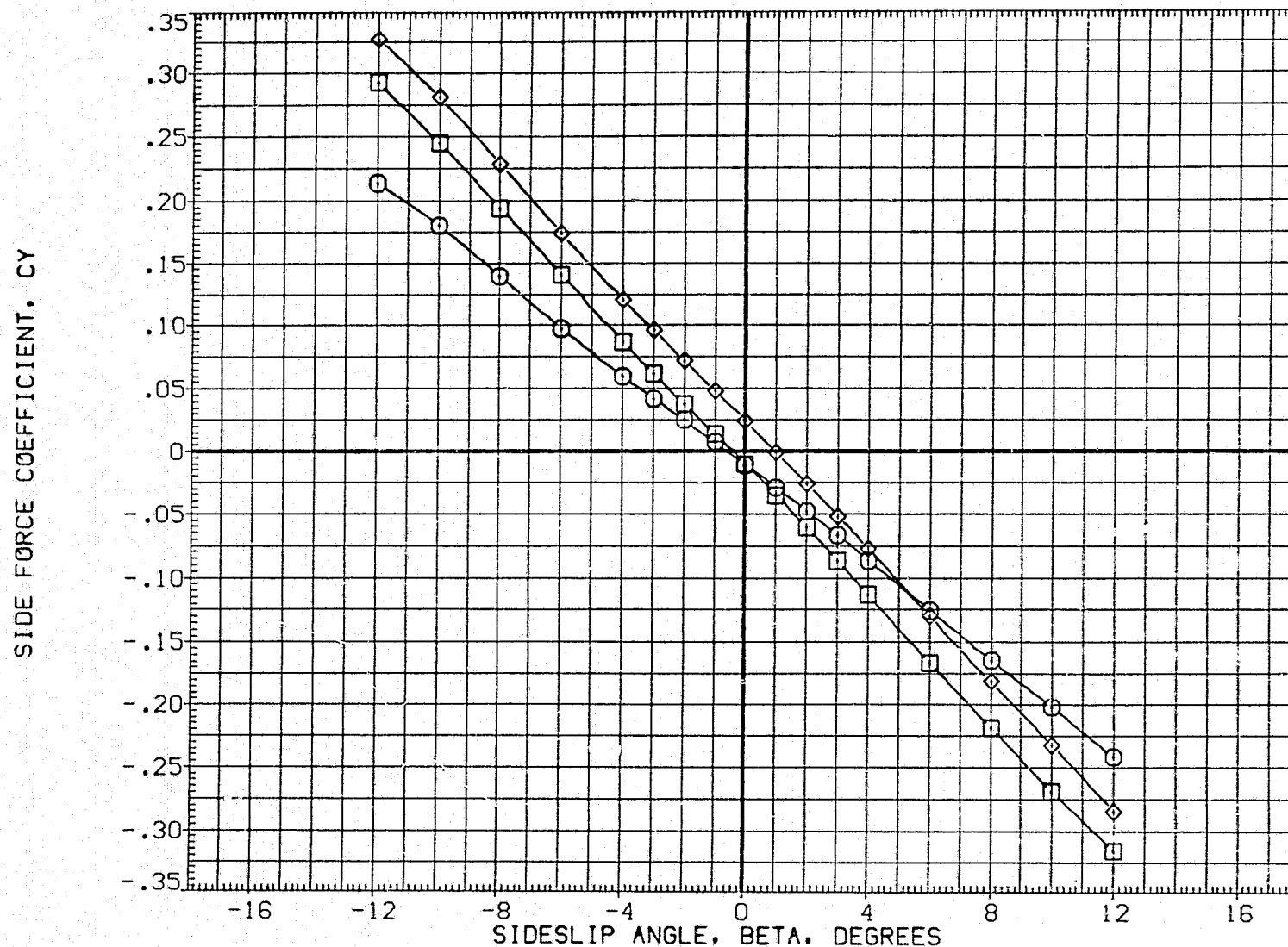


FIG. 251 747+ORB(8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA=6 DEG

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION
(RGM103)	□ CA5 K1 FO H15.1A (PLUS. ORB TCS AT38.2A)	1.000			20.000	SREF 5500.0000 SQ.FT.
(RGM083)	○ CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	1.000	.000	.000	20.000	LREF 327.8000 IN.
(RGM086)	◇ CA5 K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	1.000	10.000	10.000	20.000	BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

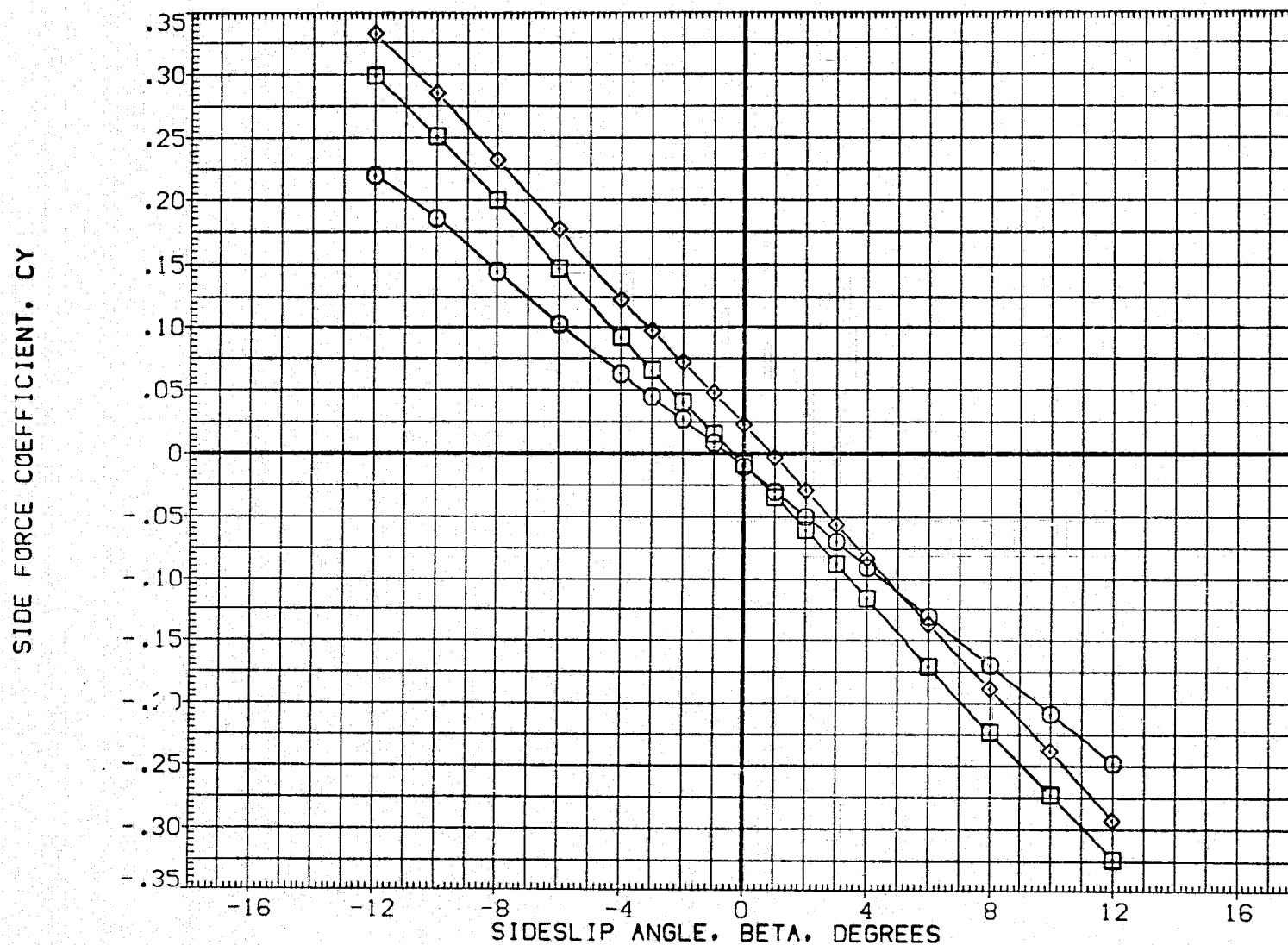


FIG. 251 747+ORB(8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA=6 DEG

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RSM103)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT39.2A)	1.000			20.000	SREF	5500.0000	SQ.FT.
(RSM083)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000			20.000	LREF	327.8000	IN.
(RSM086)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	10.000	10.000	20.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

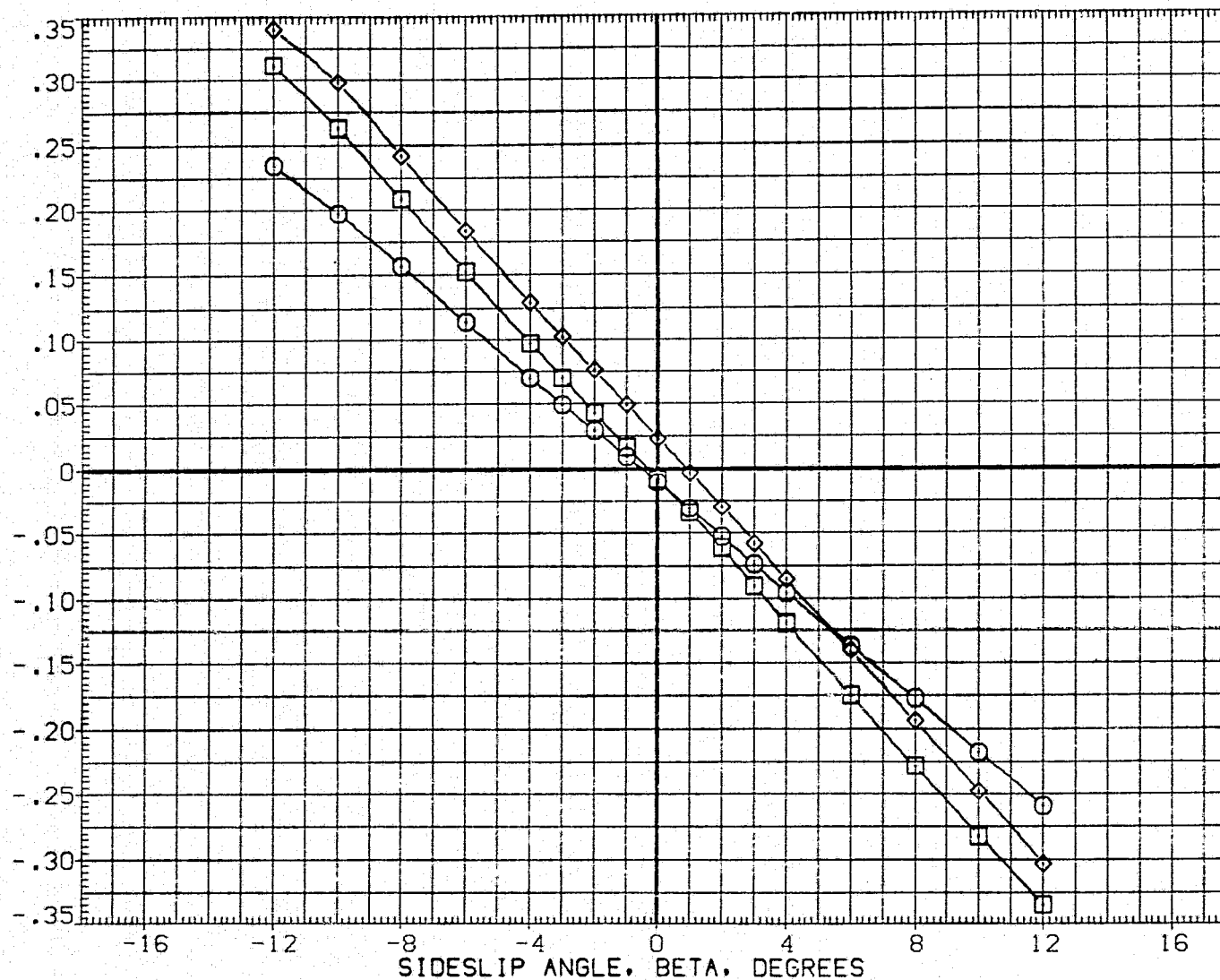


FIG. 251 747+ORB(8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA=6 DEG

(D)MACH = .70

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM103)  $\square$  CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.2A)  
 (RGM083)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)  
 (RGM086)  $\diamond$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)

STAB

RUD-U

RUD-L

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

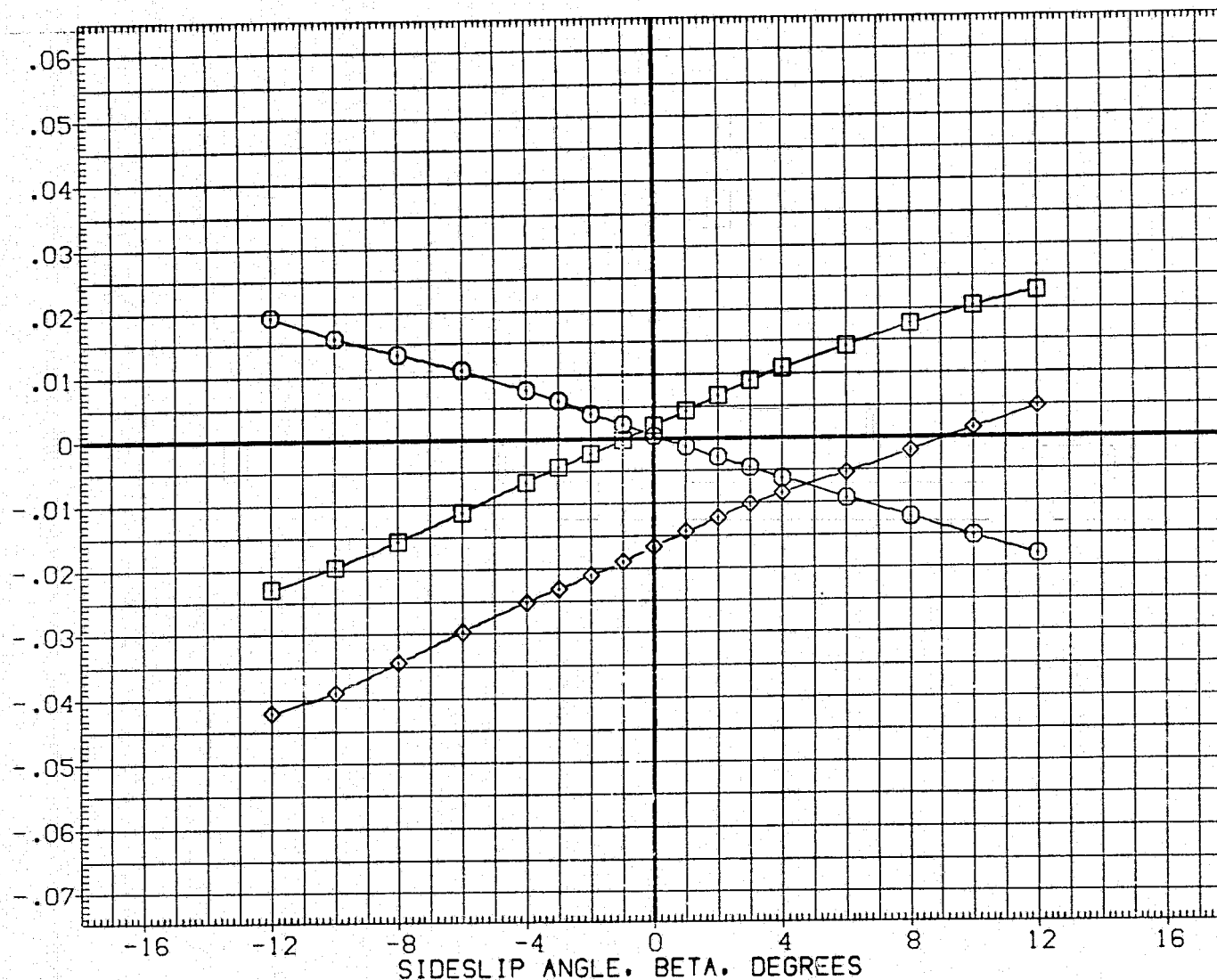


FIG. 251 747+ORB(8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA=6 DEG

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RSM103)	CAS K1 FO HIS.1A (PLUS. ORB TC5 AT38.2A)	1.000			20.000	SREF	5500.0000	SO.FT.
(RSM083)	CAS K1 FO HIS.6 V9.1 (PLUS. CRB TC5 AT38.2)	1.000	.000	.000	20.000	LREF	327.8000	IN.
(RSM086)	CAS K1 FO HIS.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	10.000	10.000	20.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

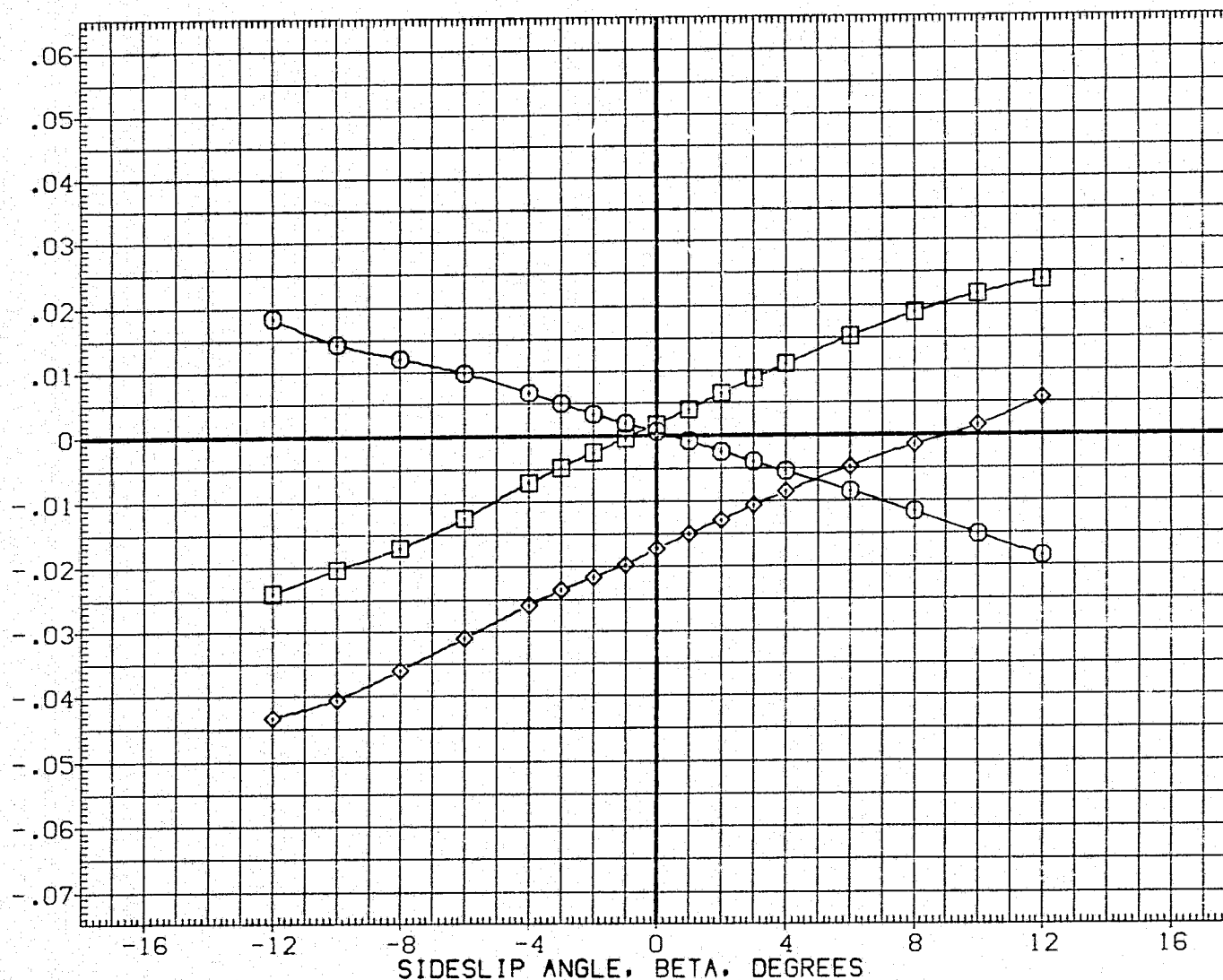


FIG. 251 747+ORB(8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA1=6 DEG

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(RGM103)	○ CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.2A)	1.000			20.000	SREF	5500.0000	SQ.FT.
(RGM083)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	.000	.000	20.000	LREF	327.8000	IN.
(RGM086)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	10.000	10.000	20.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

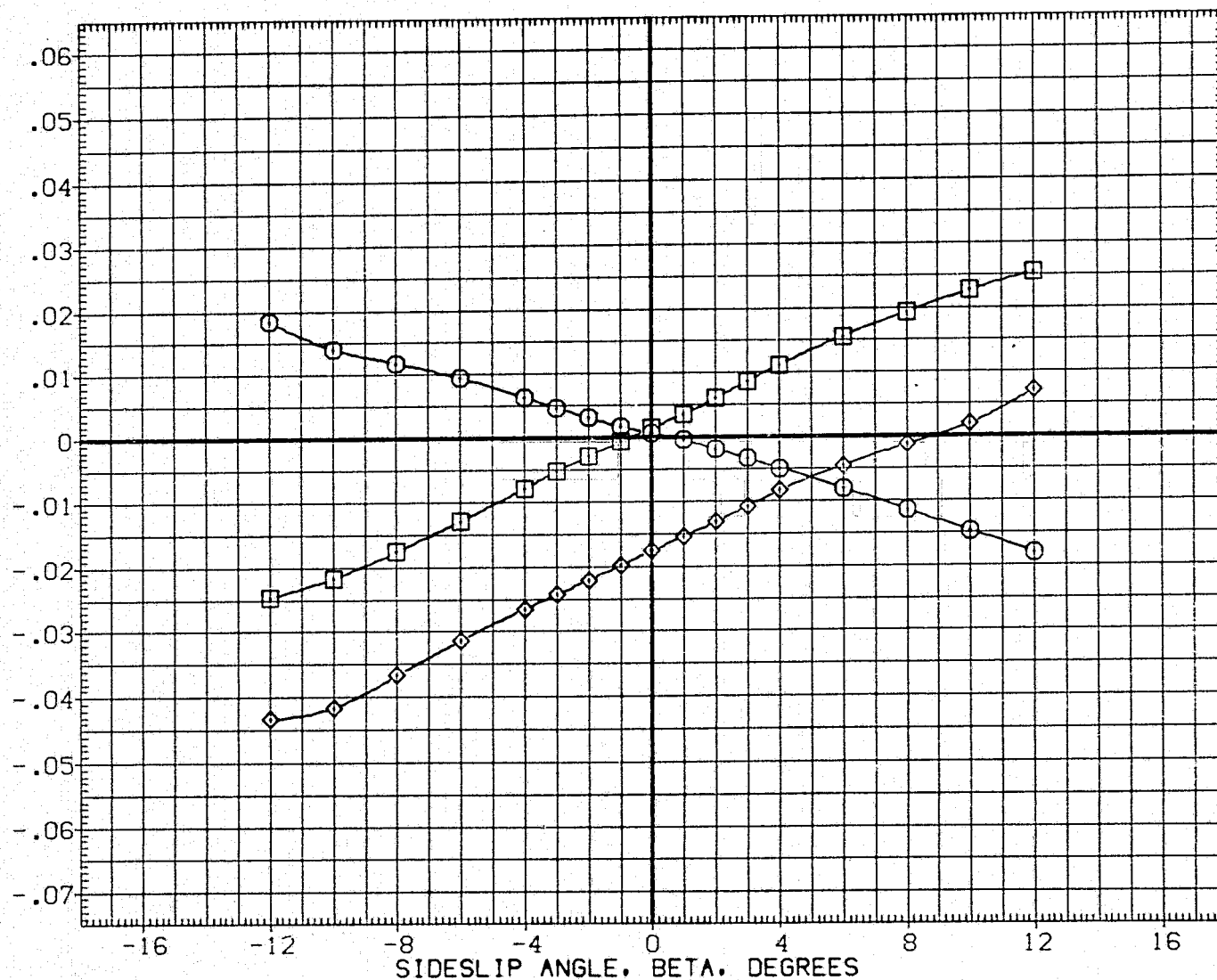


FIG. 251 747+ORB(8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA=6 DEG

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(RGM103)	CA5 K1 FO H15.1A (PLUS. OR TCS AT38.2A)	1.000			20.000	SREF	5500.0000	SQ.FT.
(RGM083)	CA5 K1 FO H15.6 V9.1 (PLUS. OR TCS AT38.2)	1.000	.000	.000	20.000	LREF	327.8000	IN.
(RGM086)	CA5 K1 FO H15.6 V9.1 (PLUS. OR TCS AT38.2)	1.000	10.000	10.000	20.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

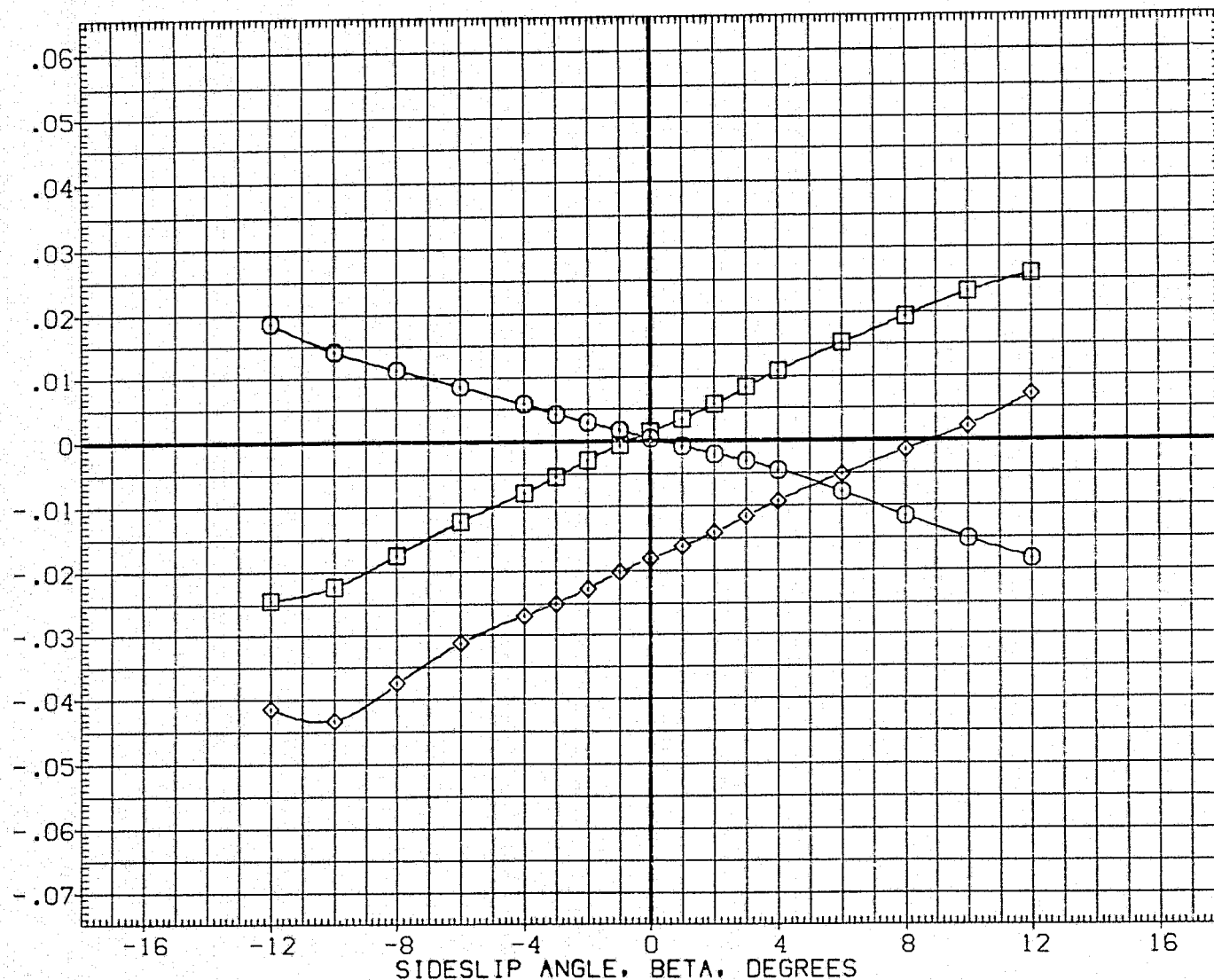


FIG. 251 747+0RB(8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA=6 DEG

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(R5M103)	CA5 K1 FO H15.1A (PLUS. ORB TC5 AT38.2A)	1.000			20.000	SREF	5500.0000	SQ.FT.
(R5M083)	CA5 K1 FO H15.6 VS.1 (PLUS. ORB TC5 AT38.2)	1.000	.000	.000	20.000	LREF	327.8000	IN.
(R5M086)	CA5 K1 FO H15.6 VS.1 (PLUS. ORB TC5 AT38.2)	1.000	10.000	10.000	20.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

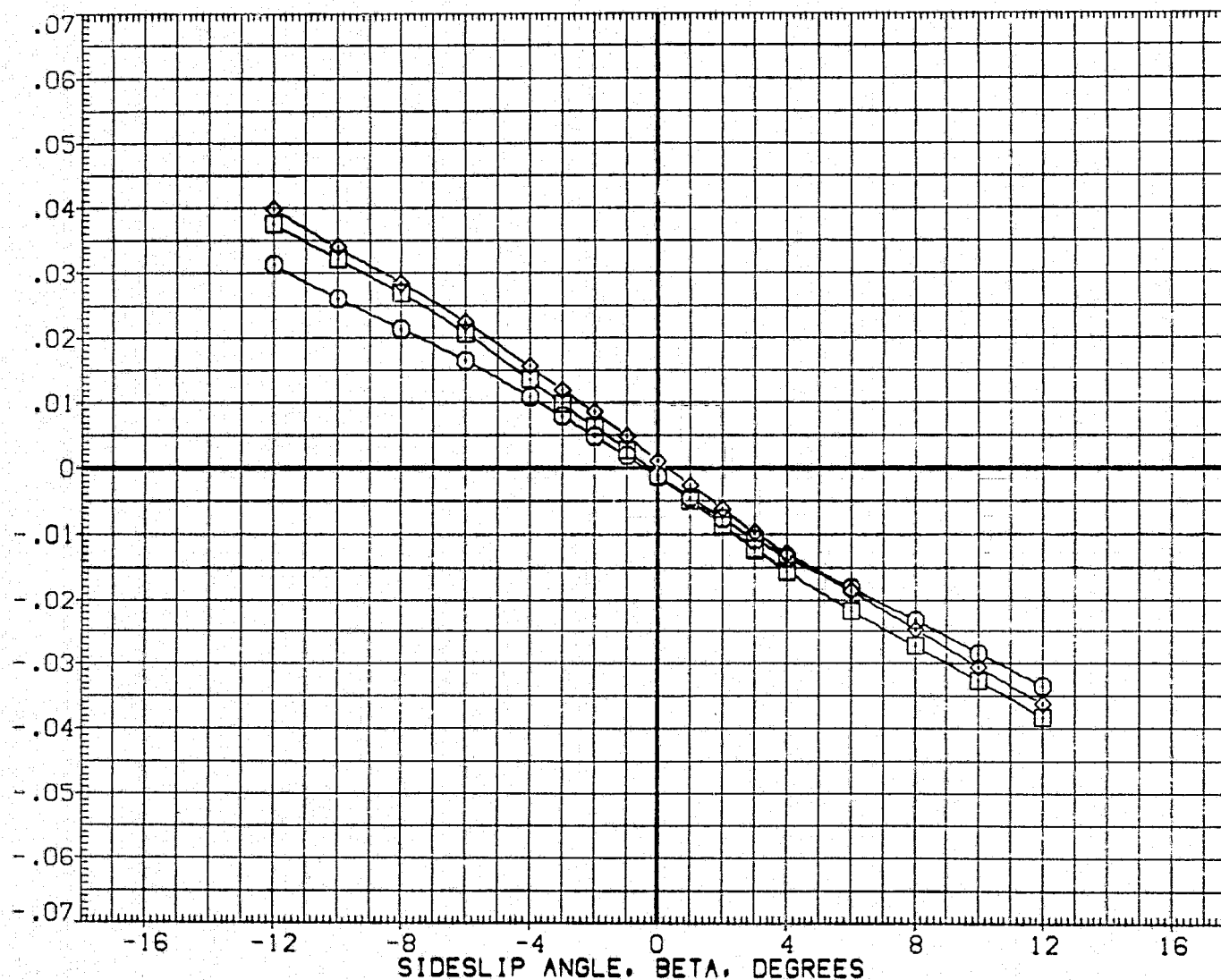


FIG. 251 747+ORB(8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA=6 DEG

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(R3M103)	○ CAS K1 F0 H15.1A (PLUS. ORB TC5 AT38.2A)	1.000			20.000	SREF	5500.0000	SQ.FT.
(RGM083)	□ CAS K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	.000	.000	20.000	LREF	327.8000	IN.
(RGM086)	◇ CAS K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	1.000	10.000	10.000	20.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

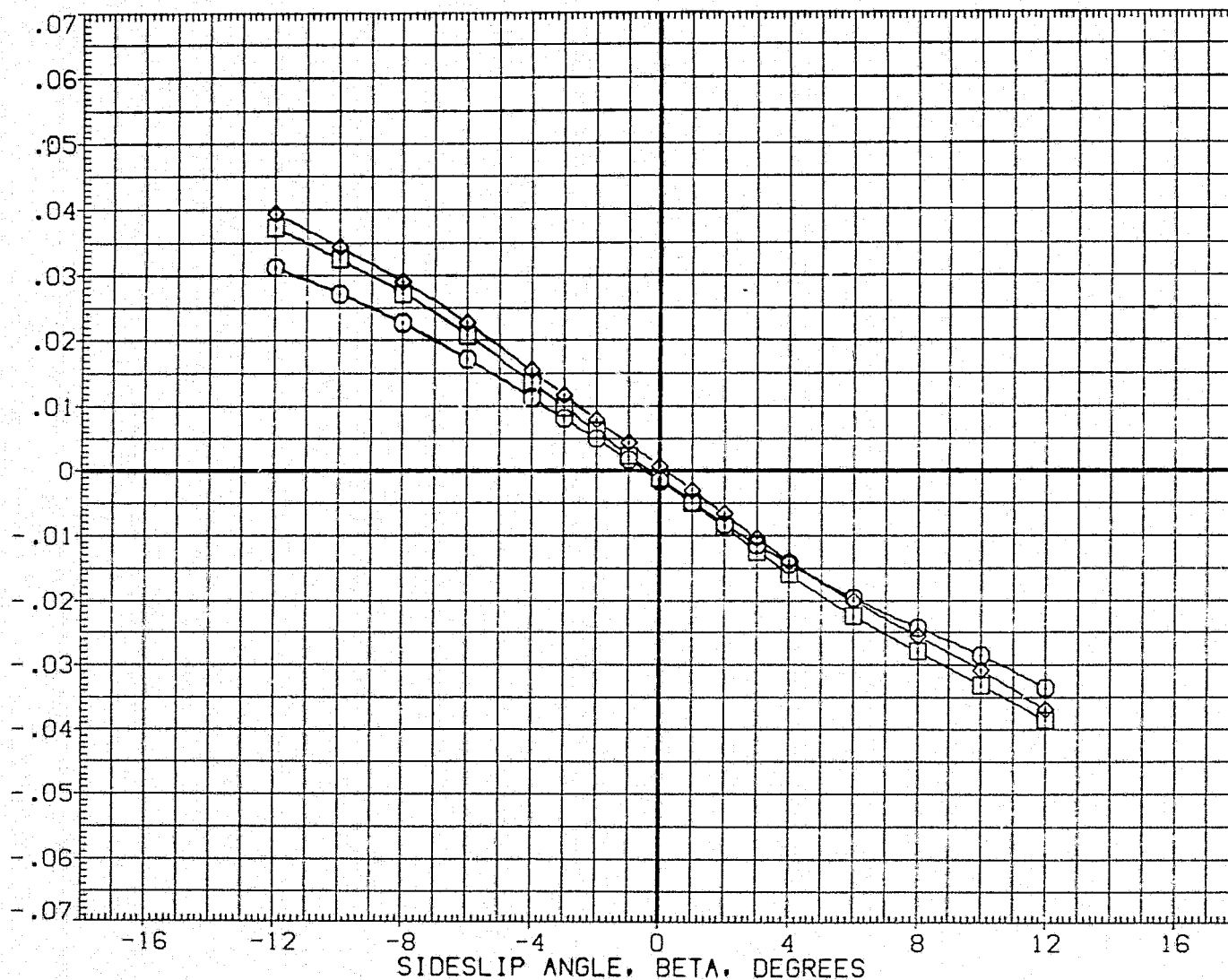


FIG. 251 747+ORB(8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA1=6 DEG  
(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(R3M103)	○ CAS K1 FO H15.1A (PLUS. ORB TCS AT38.2A)	1.000			20.000	SREF	5500.0000	SQ.FT.
(R3M083)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	.000	.000	20.000	LREF	327.8000	IN.
(R3M086)	◇ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	1.000	10.000	10.000	20.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

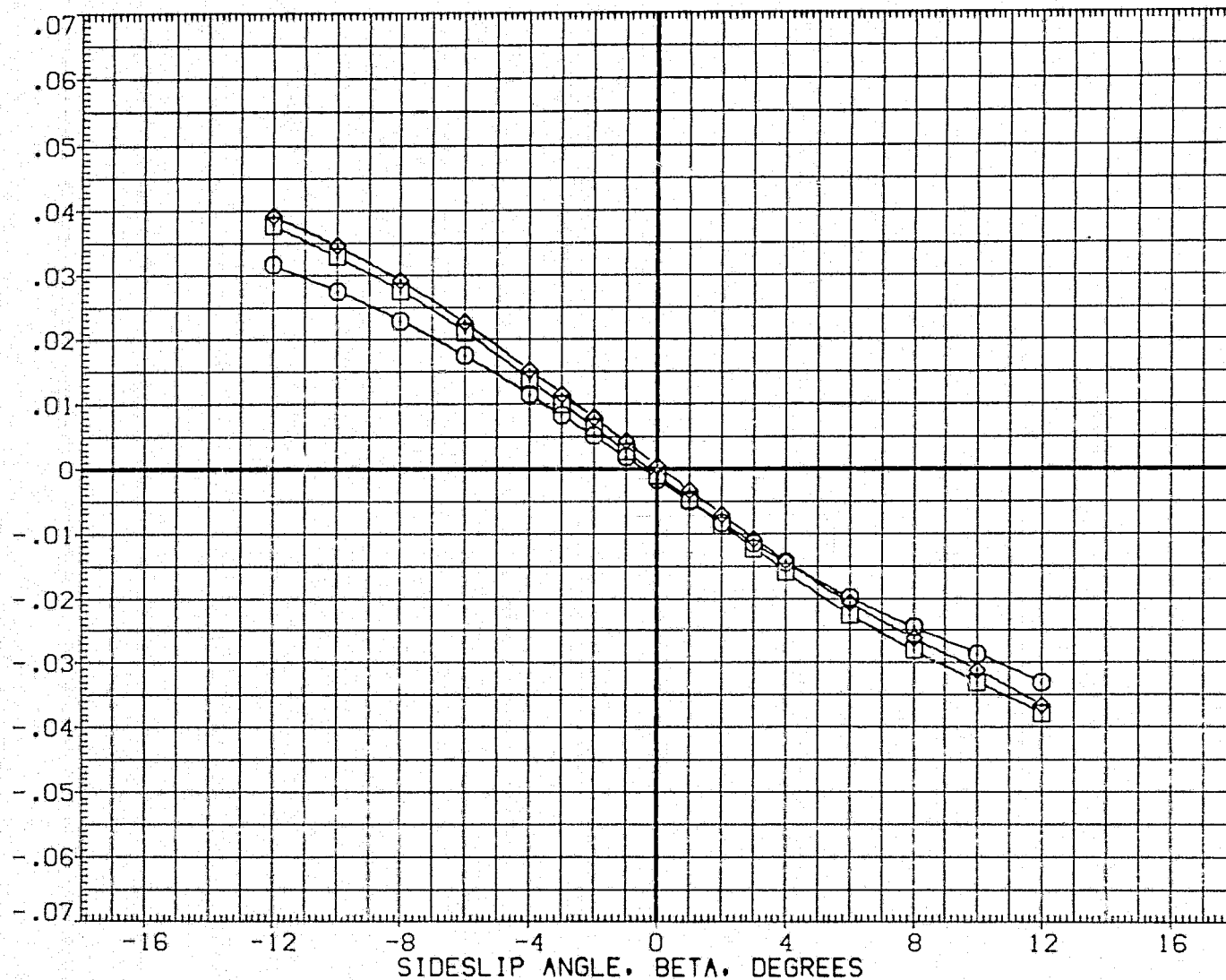


FIG. 251 747+ORB(8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA=6 DEG  
 (C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION
(RGM103)	CAS K1 FO H15.1A (PLUS. ORB TC5 AT38.2A)	1.000			20.000	SREF 5500.0000 SQ. FT.
(RGM083)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	.000	.000	20.000	LREF 327.8000 IN.
(RGM086)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	1.000	10.000	10.000	20.000	BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

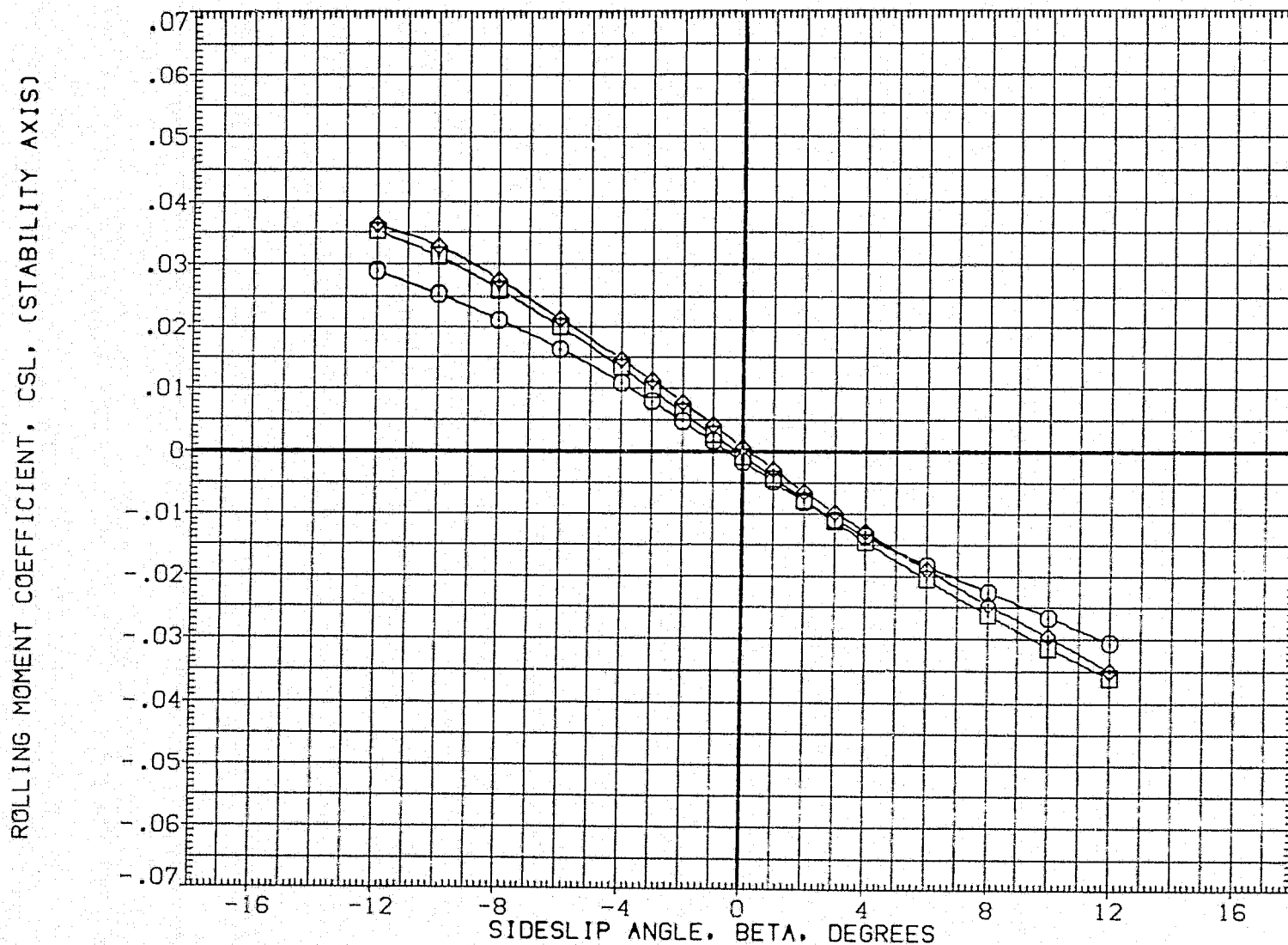


FIG. 251 747+ORB(8 DEG), RUDDER EFFECT, FLAPS UP LAUNCH, ALPHA=6 DEG

(D)MACH = .70



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(RUM093)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	.000	20.000	SREF	5500.0000	SQ. FT.
(RUM094)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	10.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

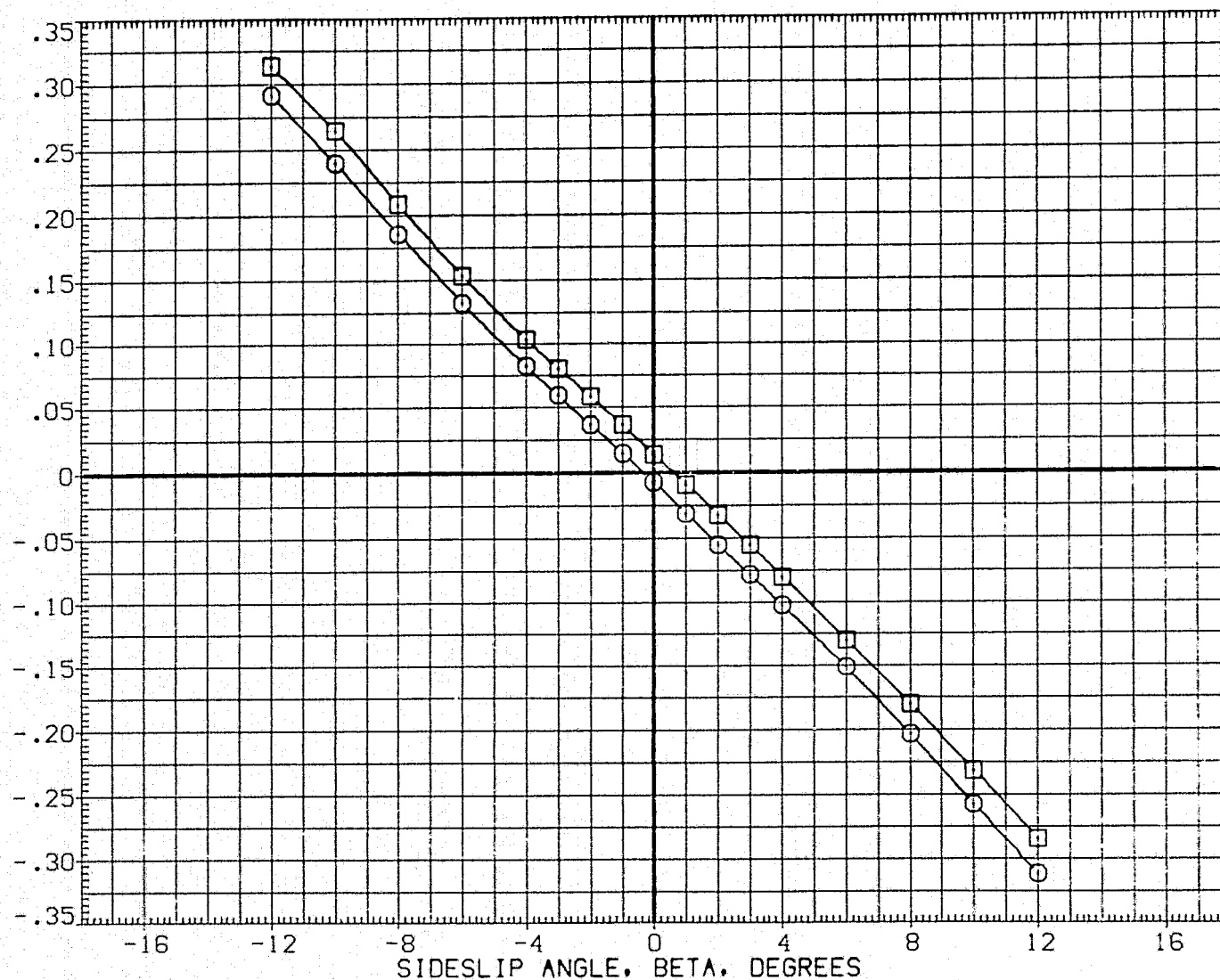


FIG. 252 747+ORB(8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA=6  
 (A) MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM093)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RGM094)  $\circ$  CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB

RUD-U

RUD-L

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

SIDE FORCE COEFFICIENT, CY

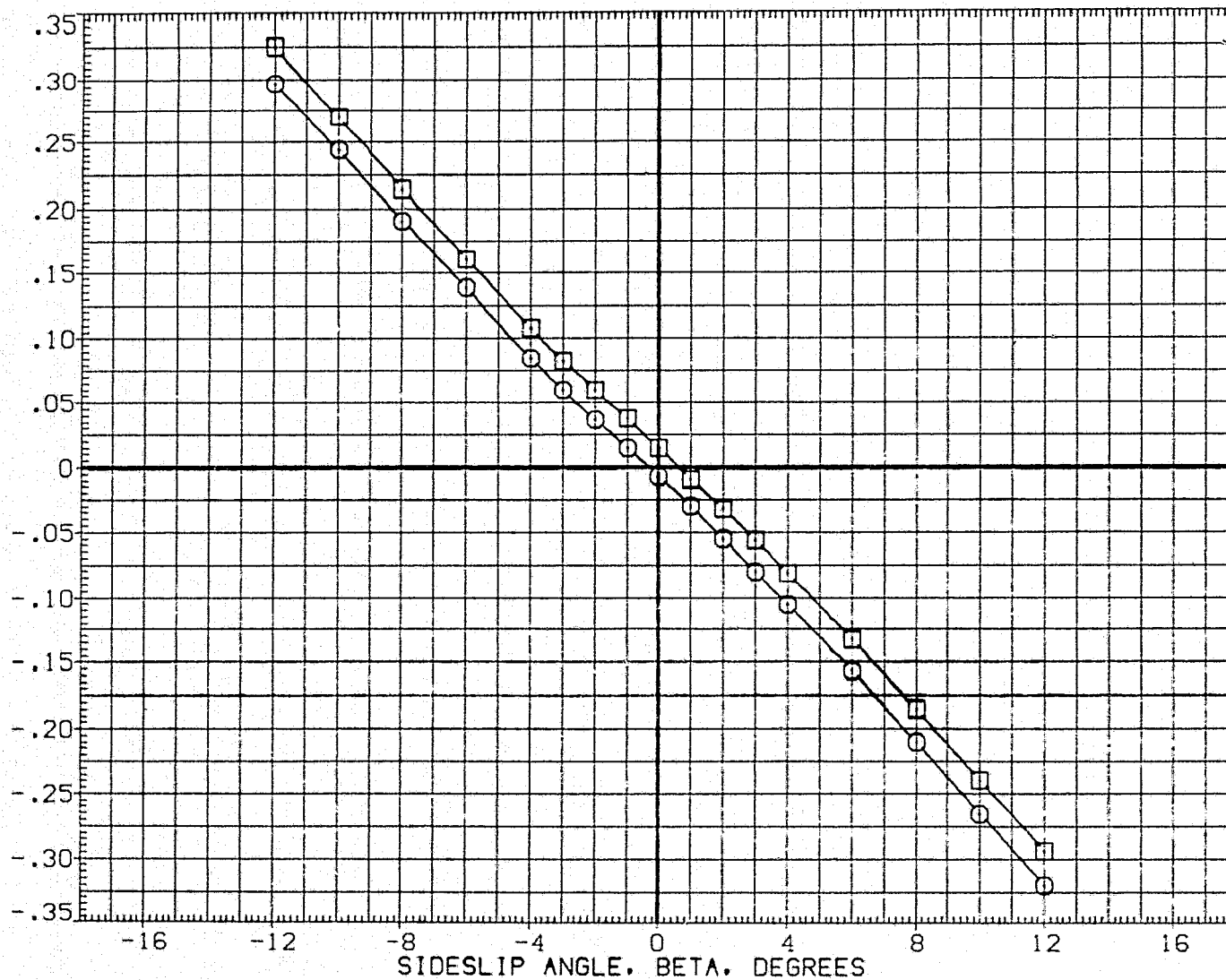


FIG. 252 747+ORB(8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA=6

(B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RUM093)  $\square$  CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RUM094)  $\circ$  CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB

RUD-U

RUD-L

SS-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

SIDE FORCE COEFFICIENT, CY

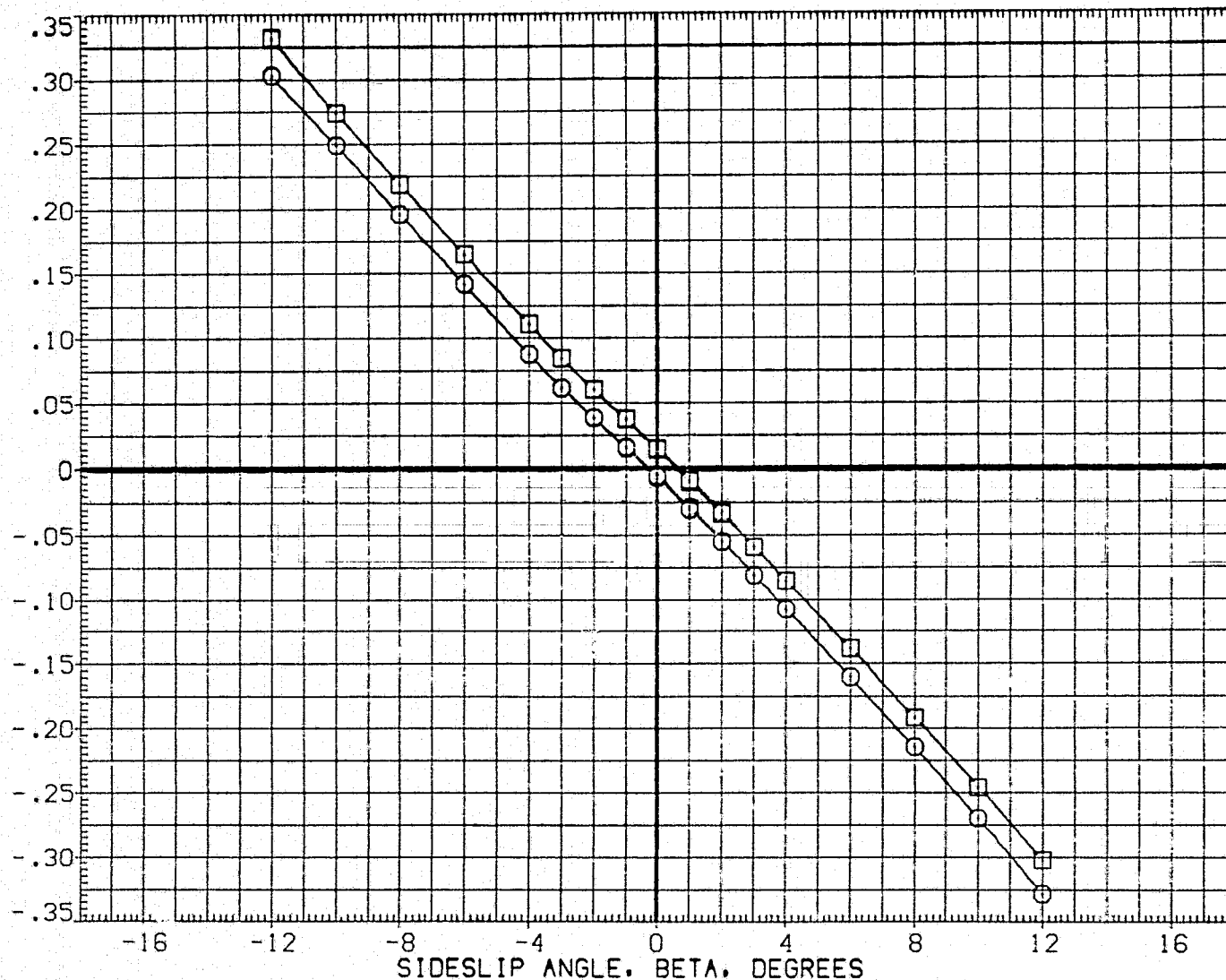


FIG. 252 747+ORB(8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA=6

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM093)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )
(RGM094)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB	RUD-U	RUD-L	S5-6
1.000	.000	.000	20.000
1.000	10.000	10.000	20.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

SIDE FORCE COEFFICIENT, CY

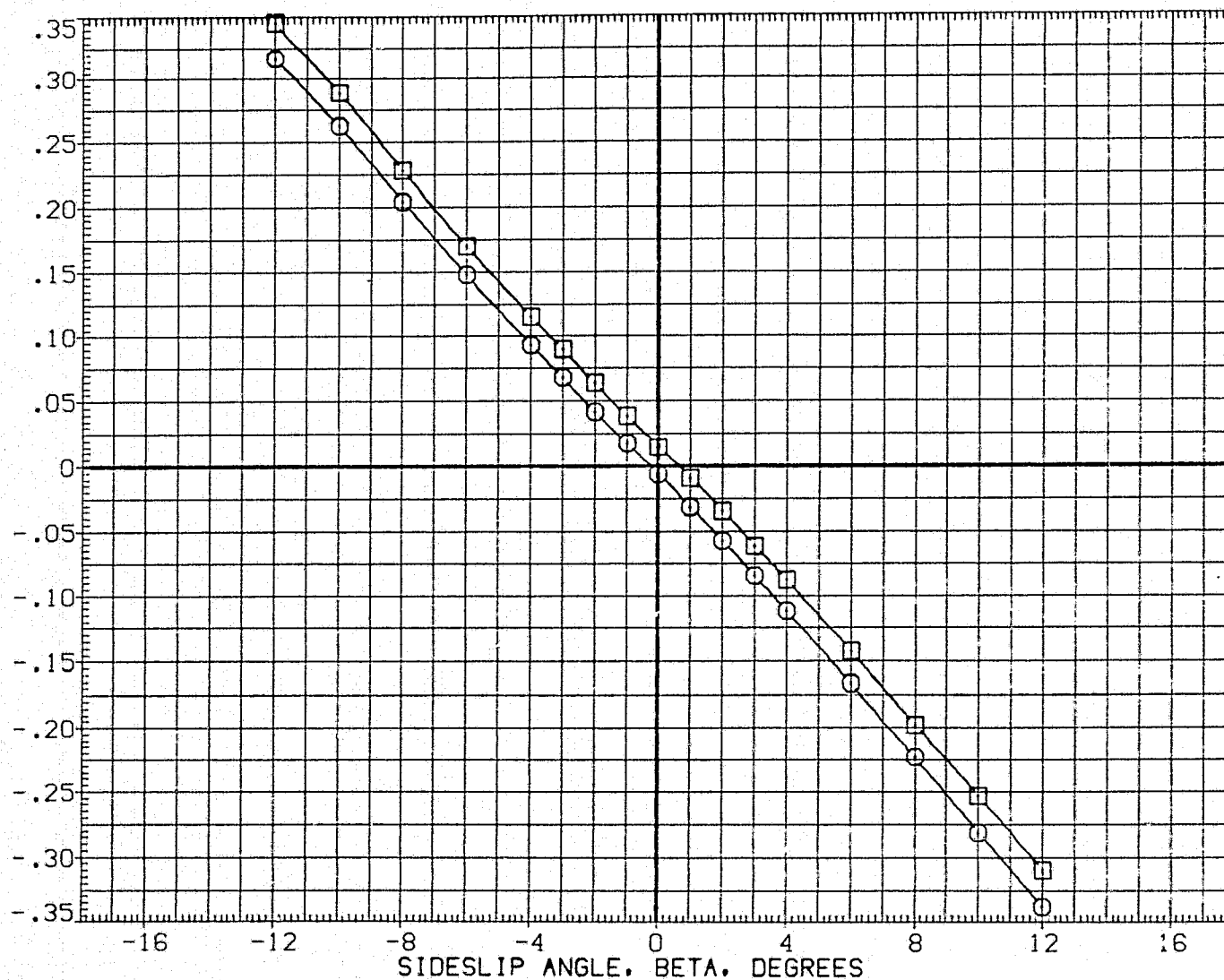


FIG. 252 747+ORB(8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA=6  
(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM093)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RGM094)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB

RUD-U

RUD-L

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

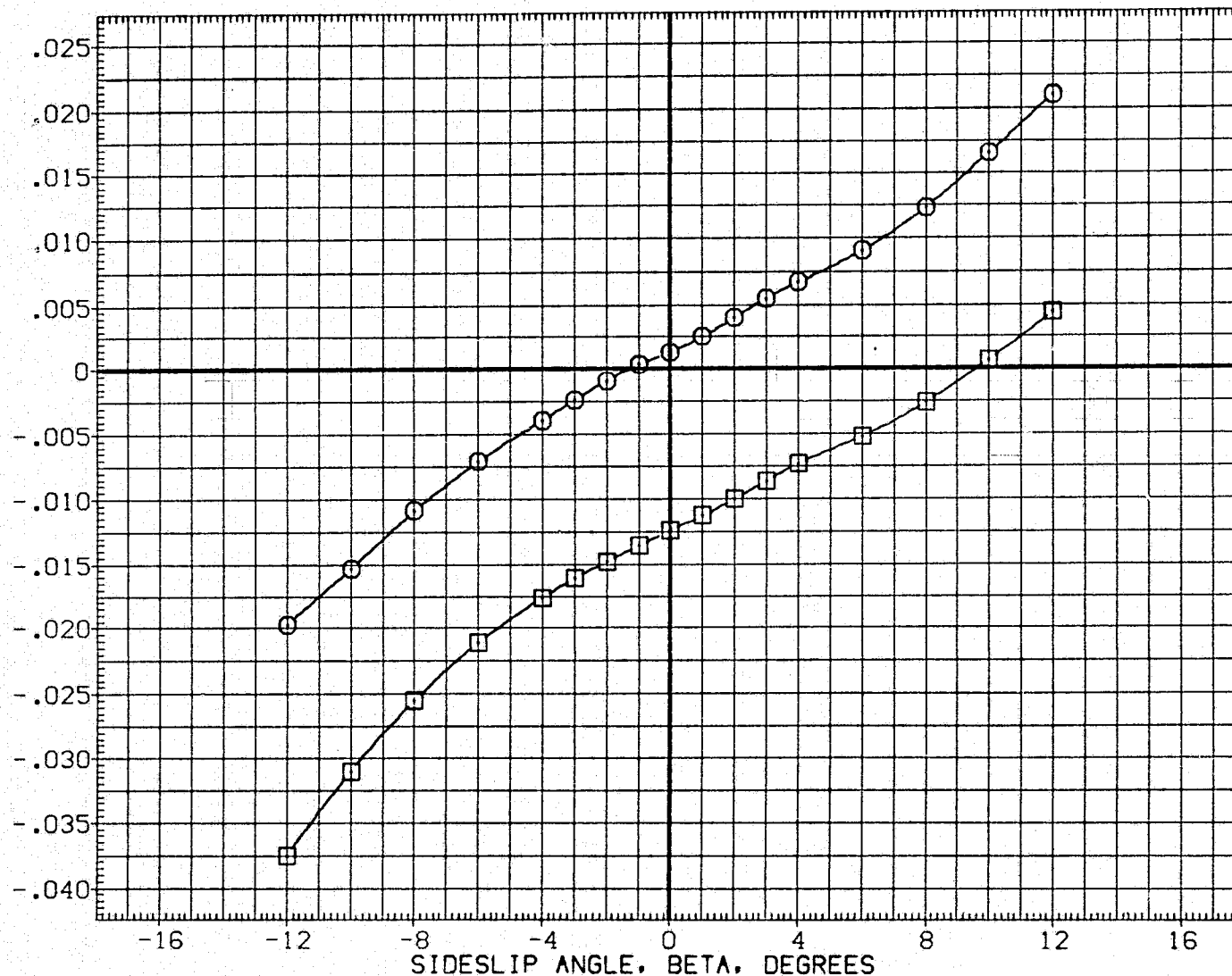


FIG. 252 747+ORB(8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA=6

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(RGMD93)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	.000	20.000	SREF	5500.0000	SQ.FT.
(RGMD94)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	10.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

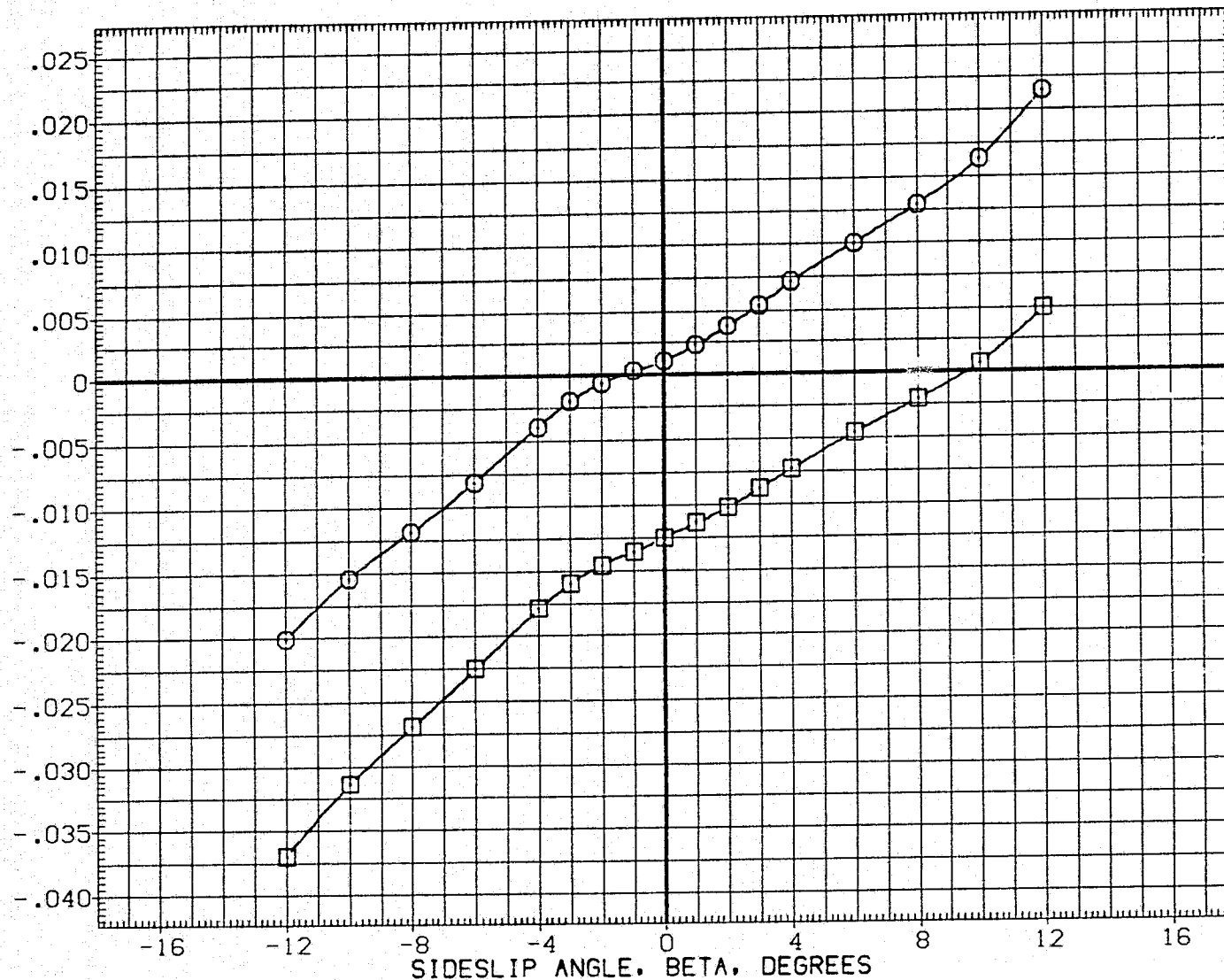


FIG. 252 747+ORB(8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA=6  
 (B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION	
(RGM093)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	.000	20.000	SREF	5500.0000 SQ.FT.
(RGM094)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	10.000	20.000	LREF	327.8000 IN.
						BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

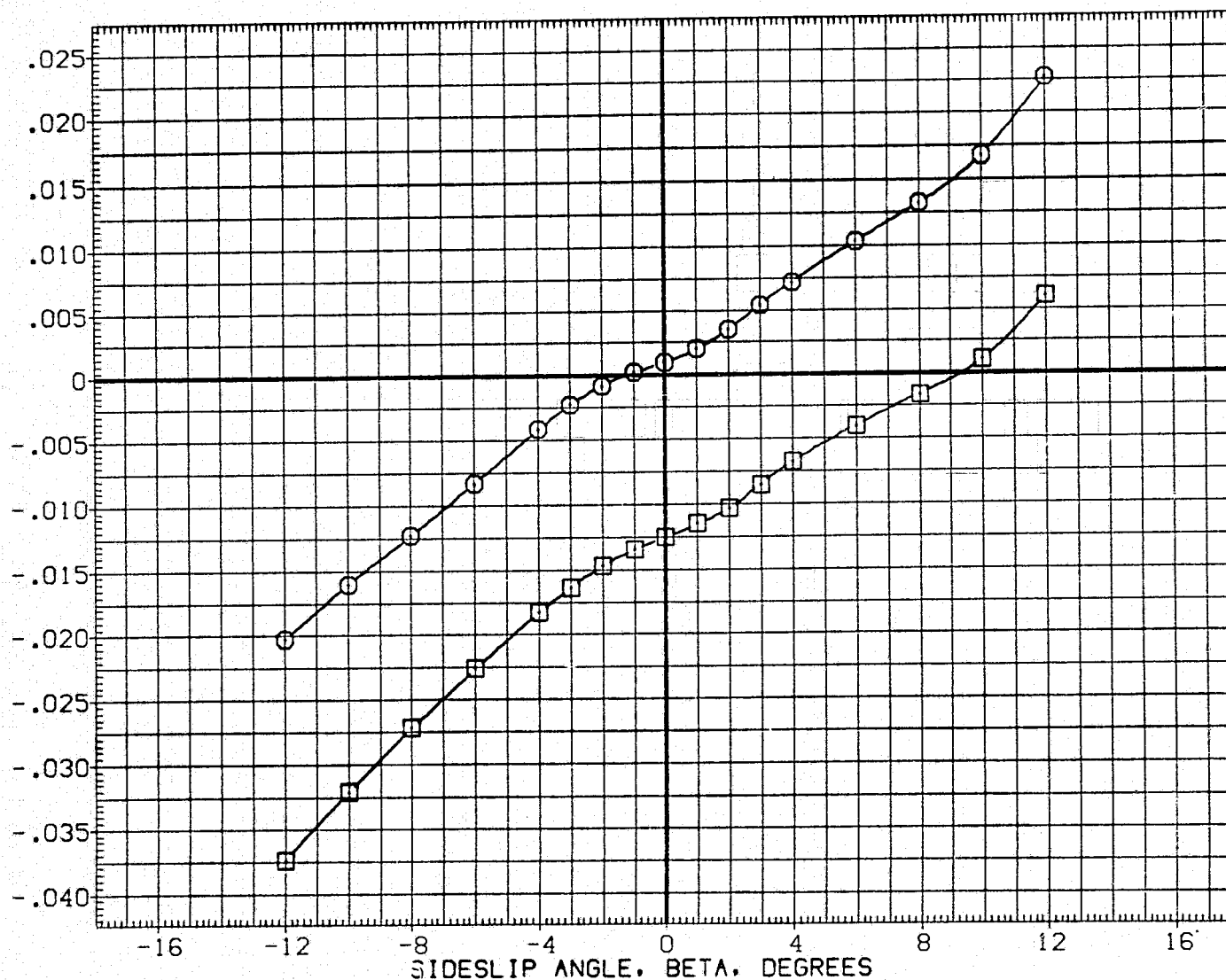




FIG. 252 747+ORB(8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA=6  
 (C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGMO93)  CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RGMO94)  CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB

RUD-U

RUD-L

S5-6

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

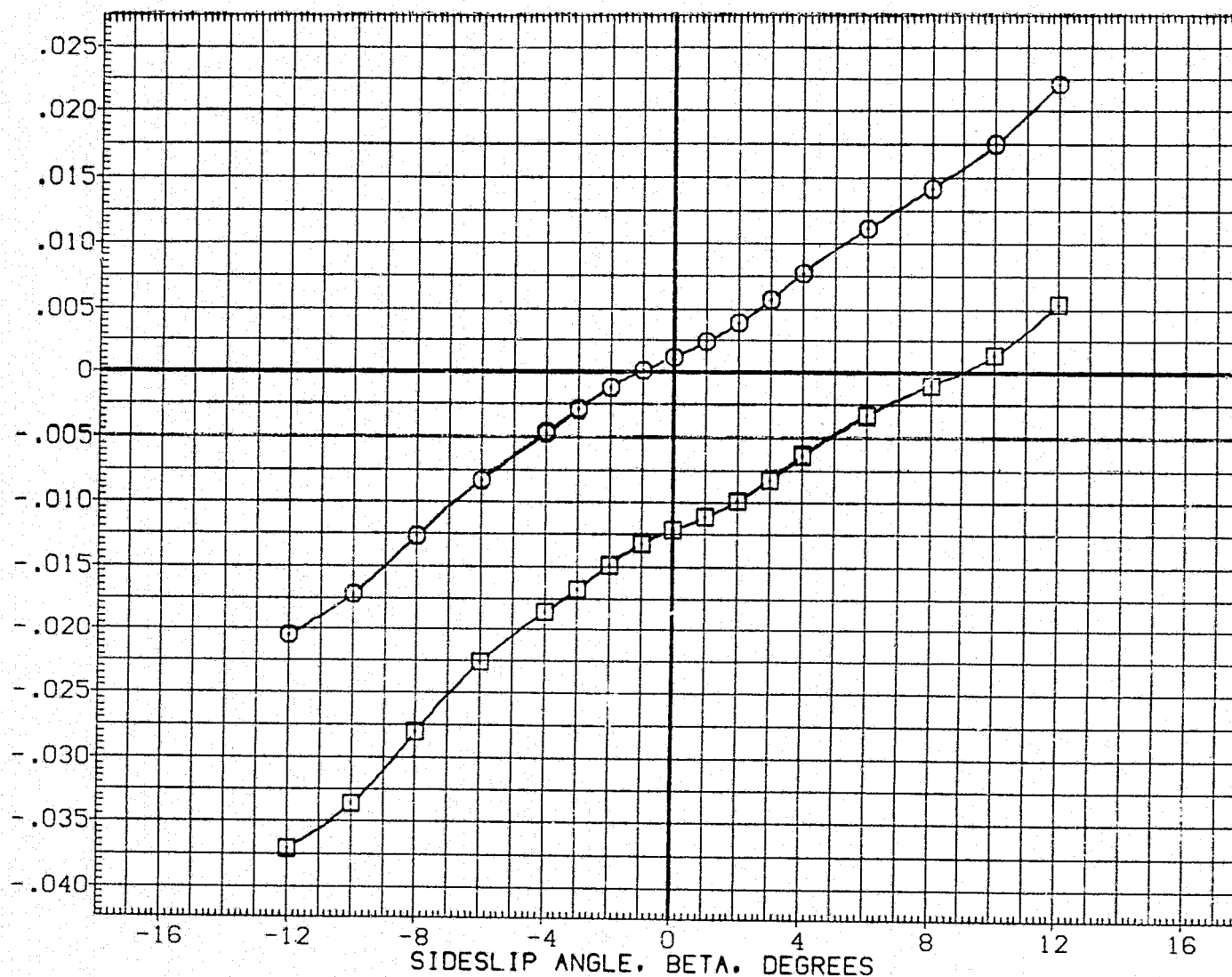


FIG. 252 747+ORB(8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA=6  
 (D)MACH = .70



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(RGM093)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	.000	20.000	SREF	5500.0000	SQ.FT.
(RGM094)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	10.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

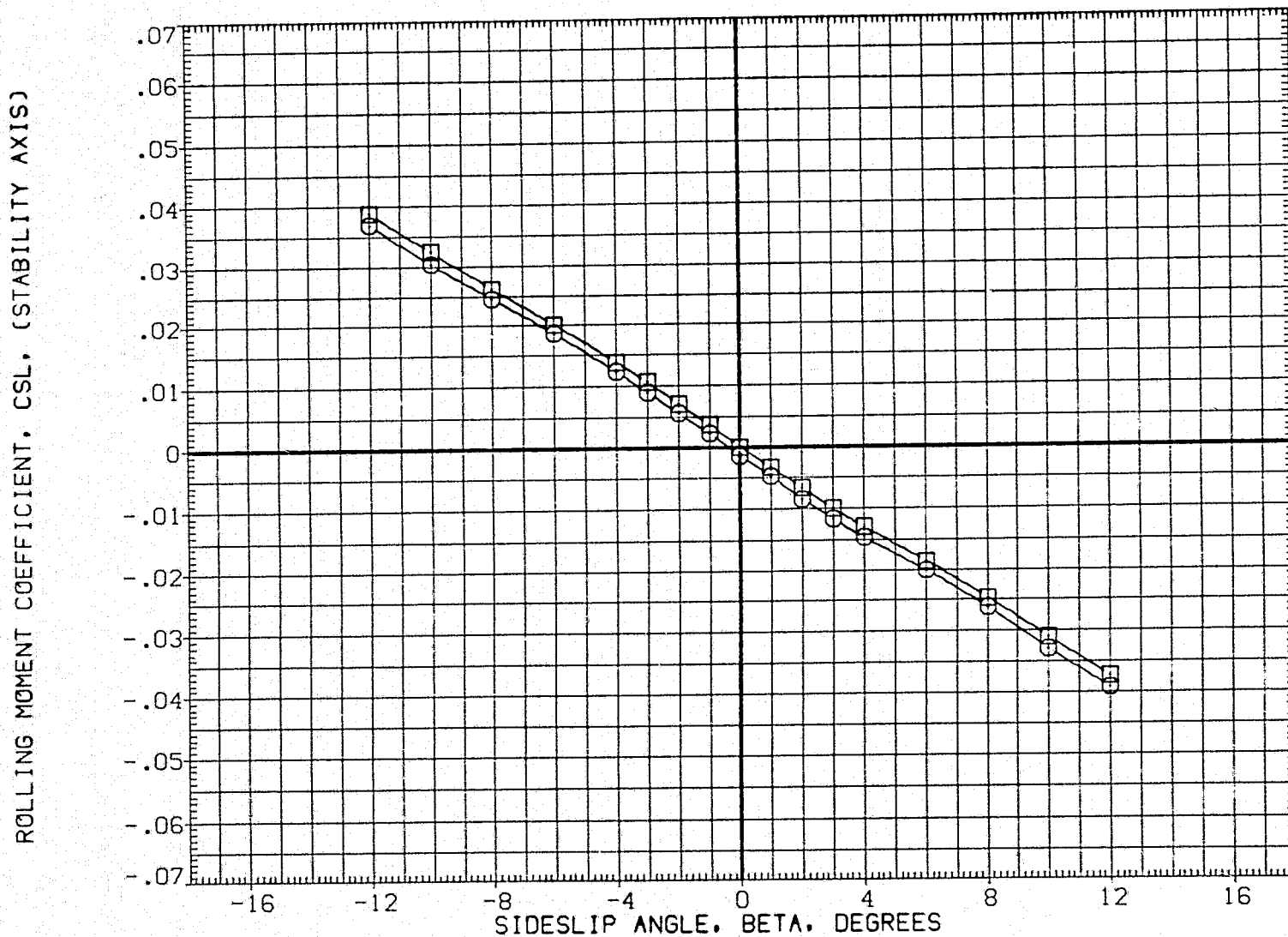




FIG. 252 747+ORB(8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA1=6

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM093)  CAS K1 F0 H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )(RGM094)  CAS K1 F0 H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

STAB

RUD-U

RUD-L

S5-6

REFERENCE INFORMATION

1.000

.000

.000

20.000

SREF

5500.0000 SQ.FT.

LREF

327.8000 IN.

BREF

2348.0000 IN.

XMRP

1339.9100 IN. XC

YMRP

.0000 IN. YC

ZMRP

190.7500 IN. ZC

SCALE

.0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

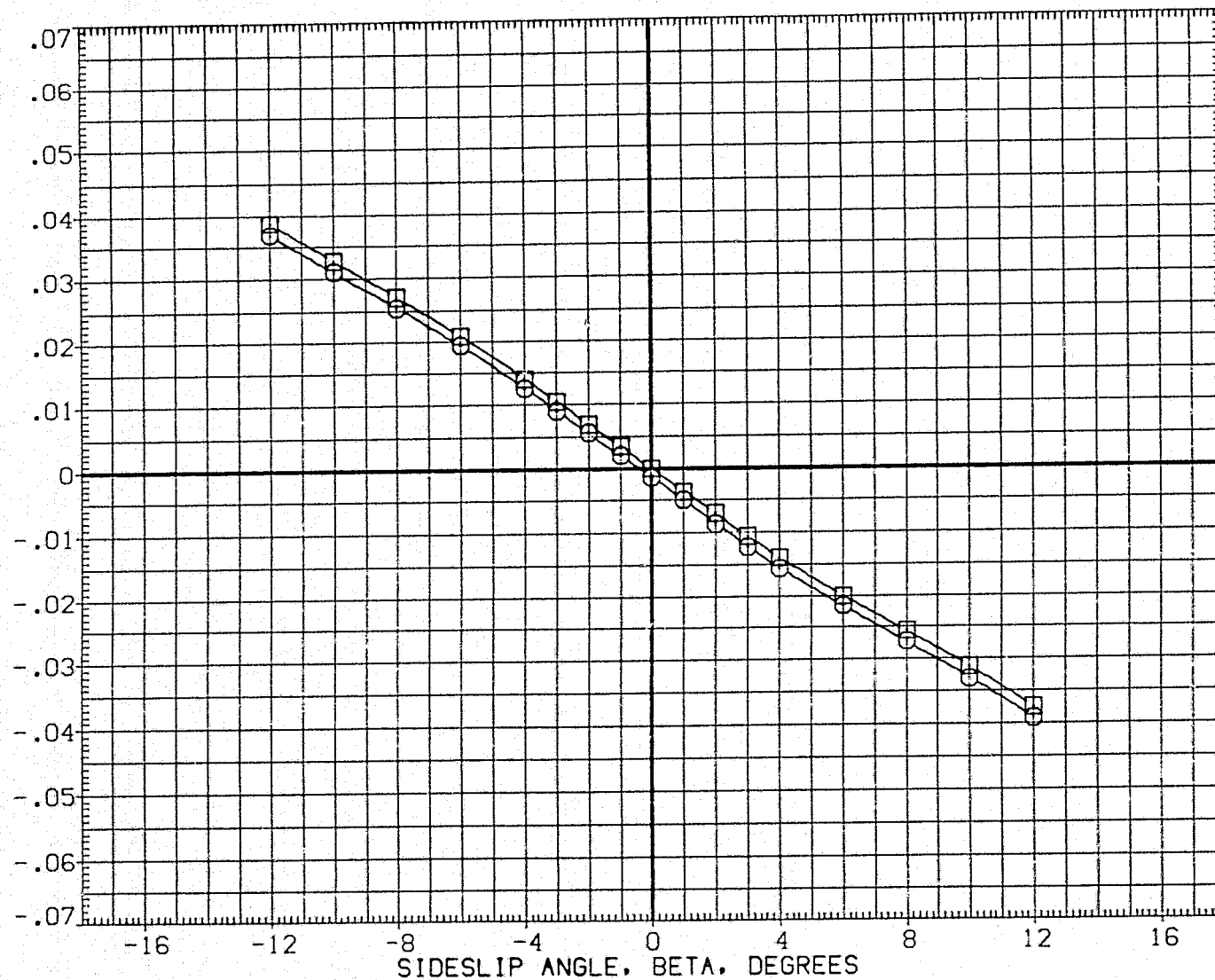


FIG. 252 747+ORB(8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA=6

(B)MACH = .50

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RCM093)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	.000	20.000	SREF	5500.0000	50.FT.
(RCM094)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	10.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

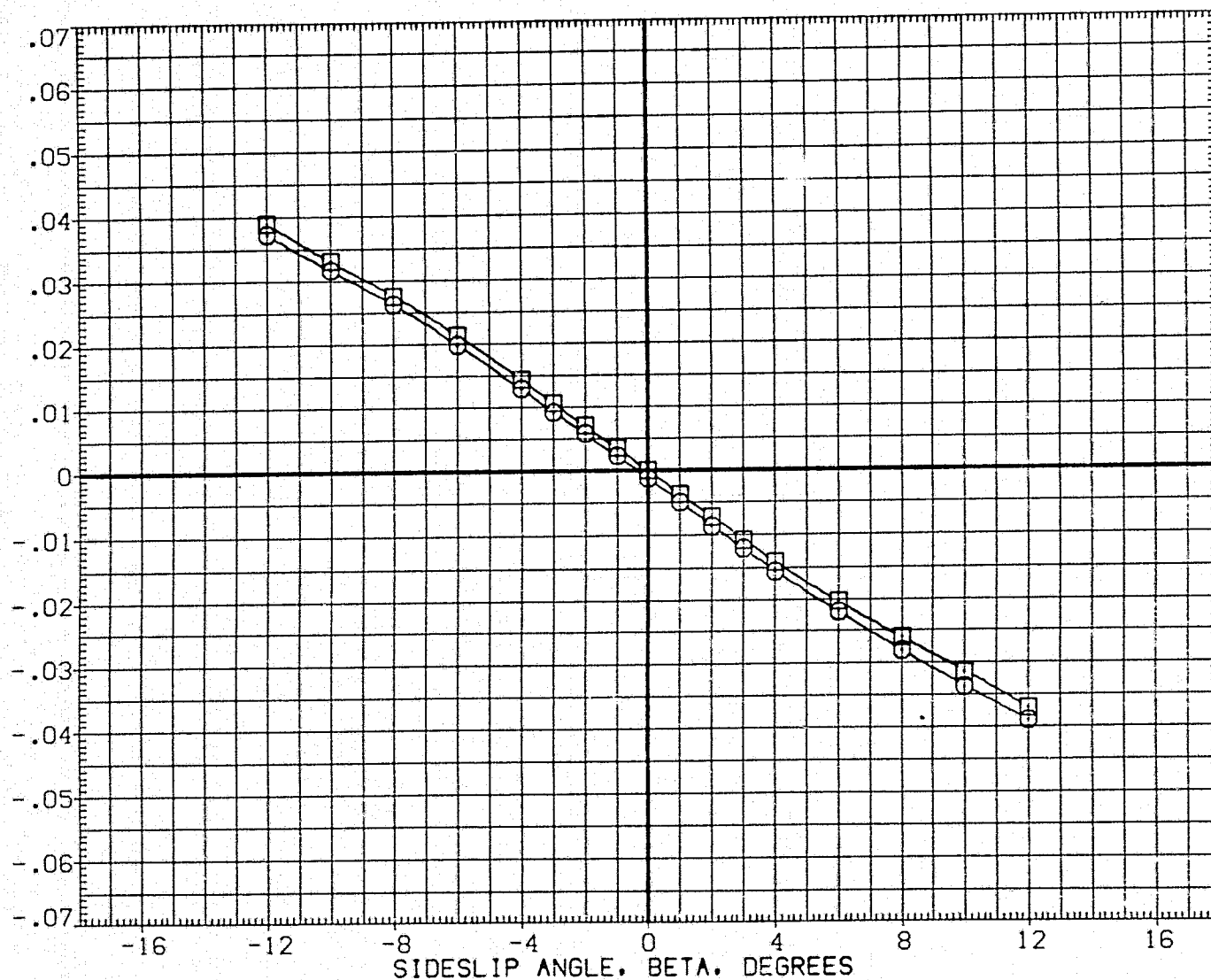


FIG. 252 747+ORB(8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA=6  
(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(RGM093)	CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	.000	.000	20.000	SREF	5500.0000	SQ.FT.
(RGM094)	CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	1.000	10.000	10.000	20.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

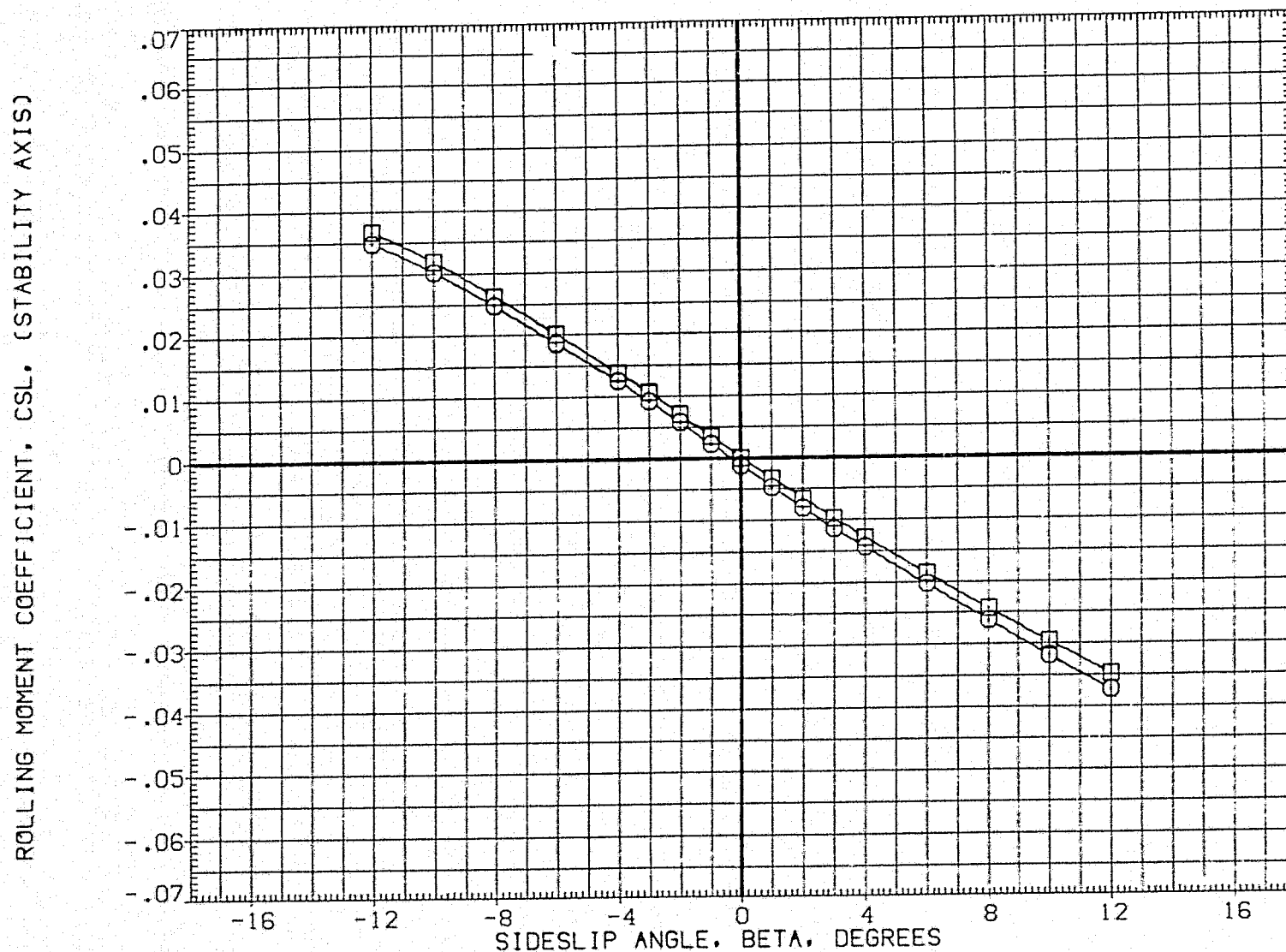


FIG. 252 747+ORB(8 DEG), RUDDER EFFECT, TAIL CONE OFF, FLAPS UP LAUNCH, ALPHA=6  
 (D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA I	STAB	SS-6	ORB ELV	REFERENCE INFORMATION
(RGM083)	○ CA5 K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	20.000		SREF 5500.0000 SO.FT.
(RGM088)	□ CA5 K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	20.000	5.000	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

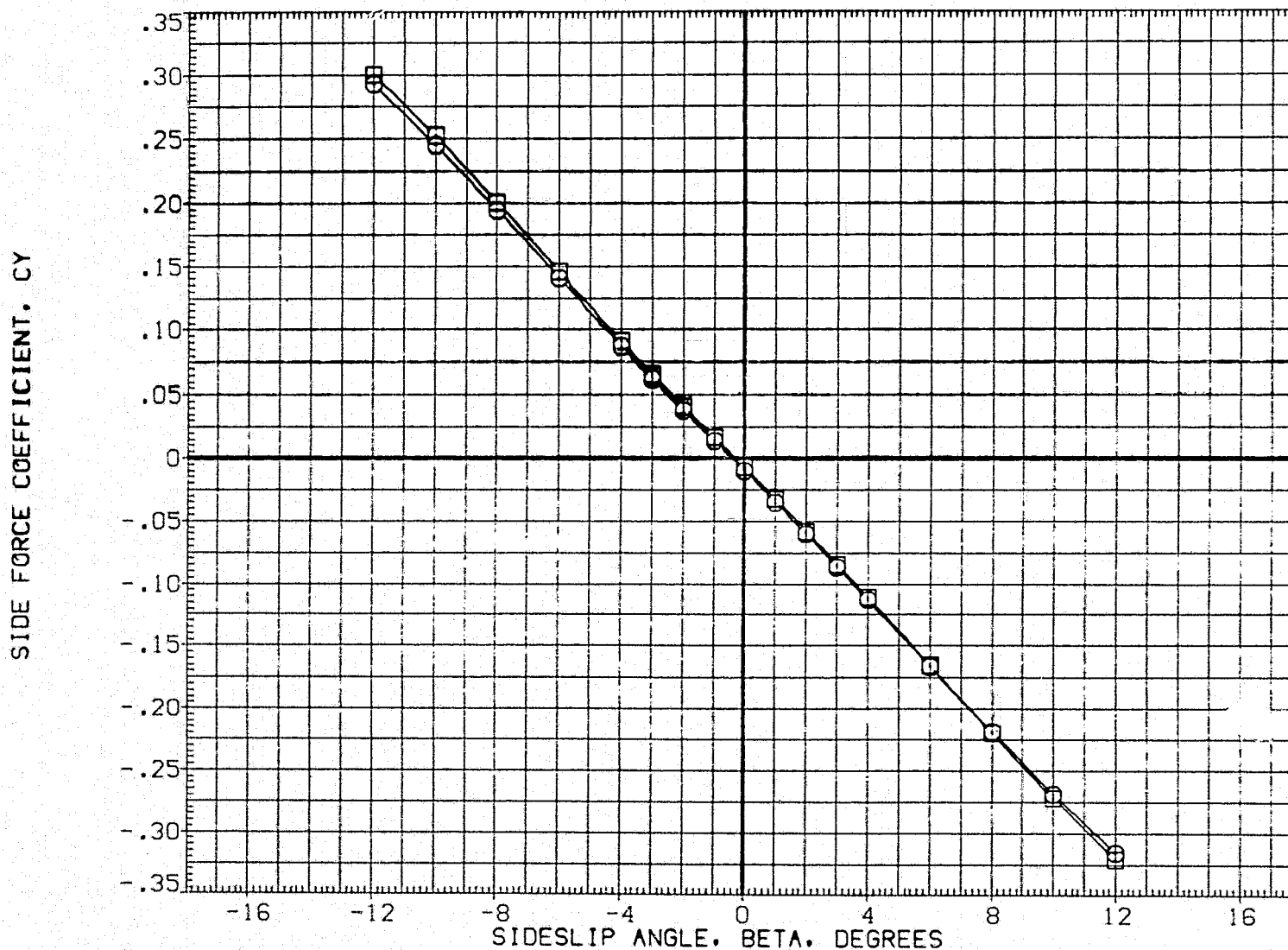


FIG. 253 747+ORB(8 DEG), EFFECT OF ORB ELEVONS, FLAPS UP LAUNCH

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA I	STAB	SS-6	ORBELV	REFERENCE INFORMATION
(RGM083)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	6.000	1.000	20.000		SREF 5500.0000 SQ.FT.
(RGM088)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	6.000	1.000	20.000	5.000	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

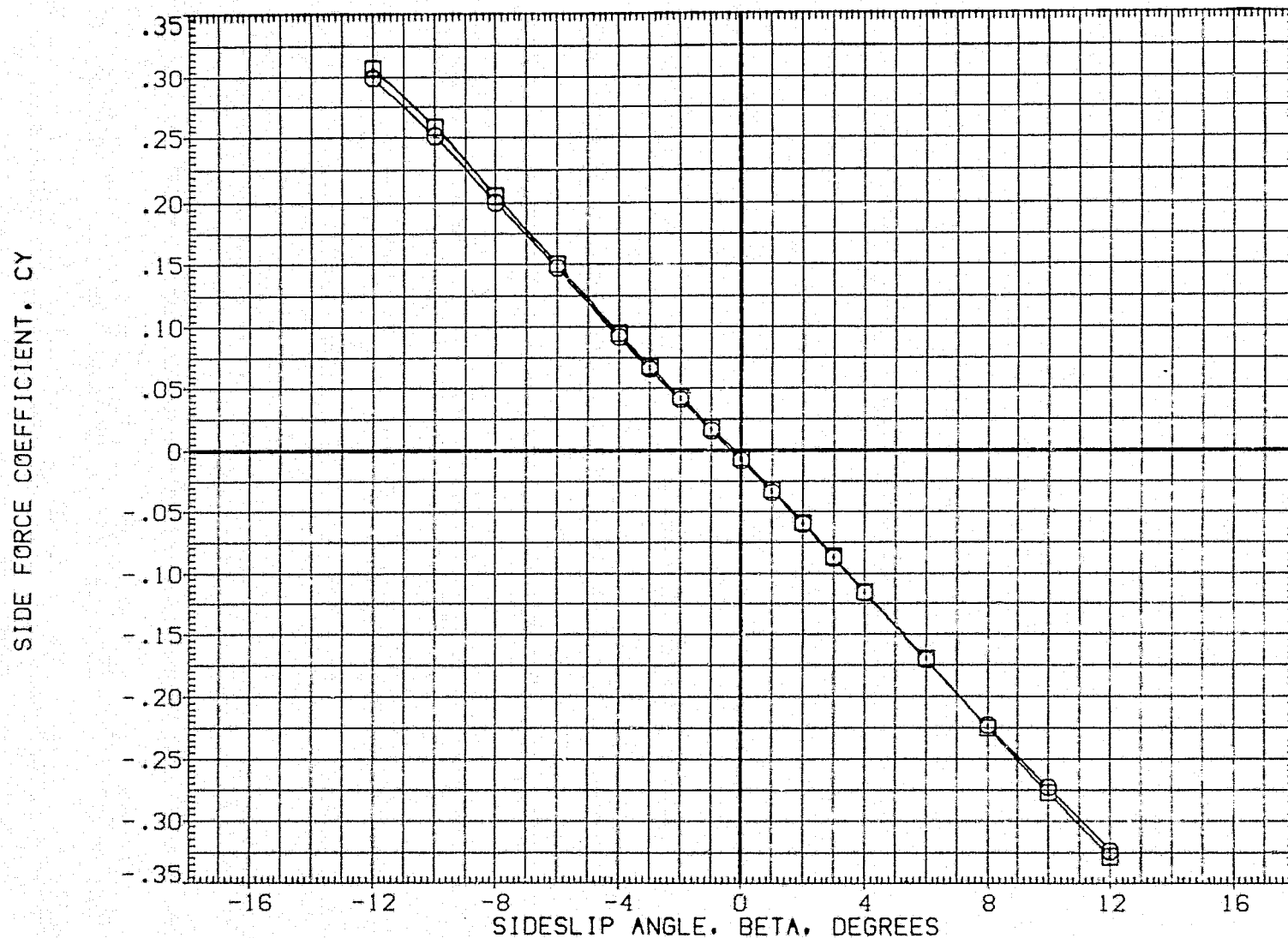


FIG. 253 747+ORB(8 DEG), EFFECT OF ORB ELEVONS, FLAPS UP LAUNCH  
 (B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	SS-6	ORBELV	REFERENCE INFORMATION
(RGM083)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	6.000	1.000	20.000		SREF 5500.0000 SQ. FT.
(RGM088)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	6.000	1.000	20.000	5.000	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

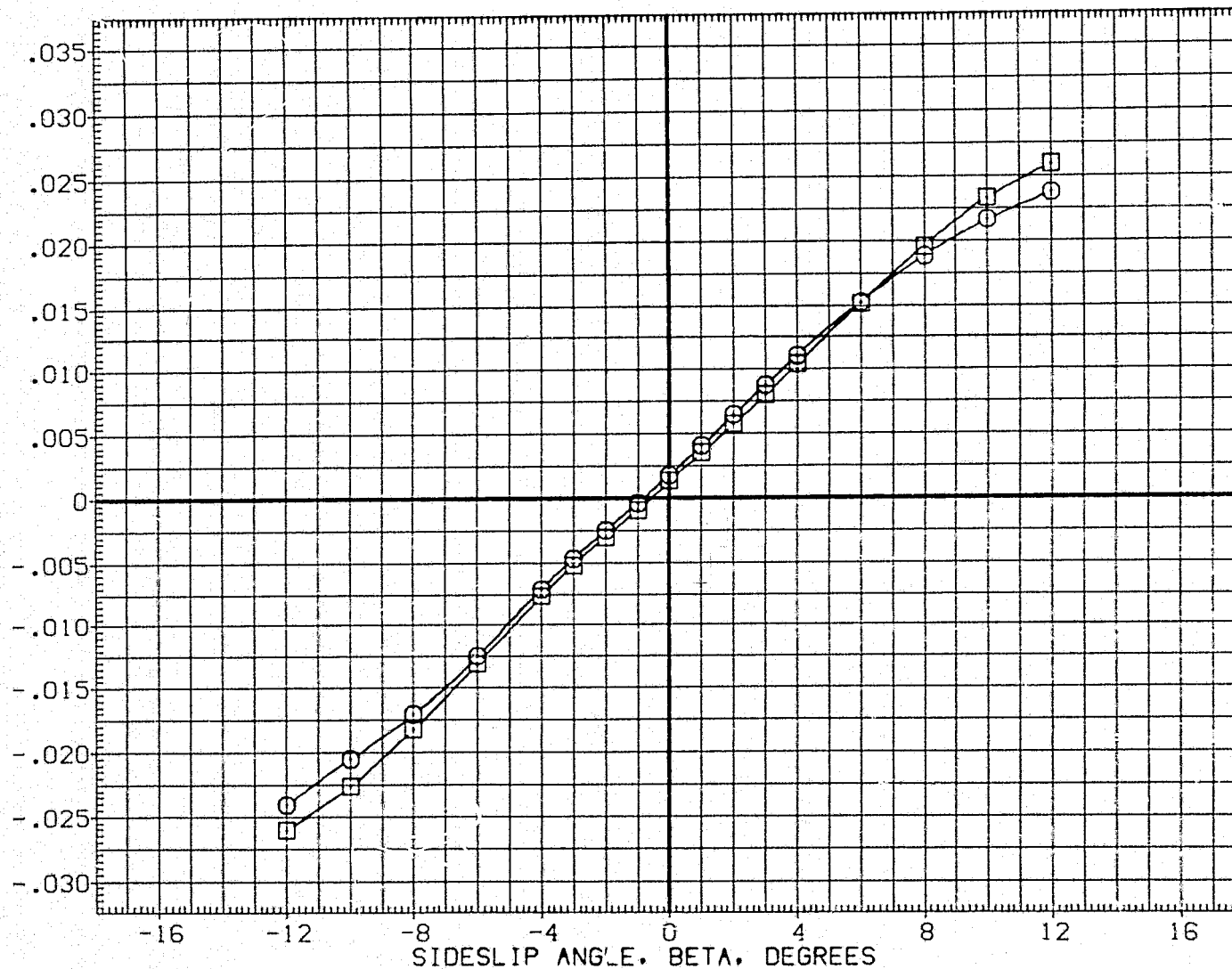


FIG. 253 747+ORB(8 DEG), EFFECT OF ORB ELEVONS, FLAPS UP LAUNCH

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(R1M083)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (R1M088)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

ALPHA1

STAB

SS-6

ORBELV

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

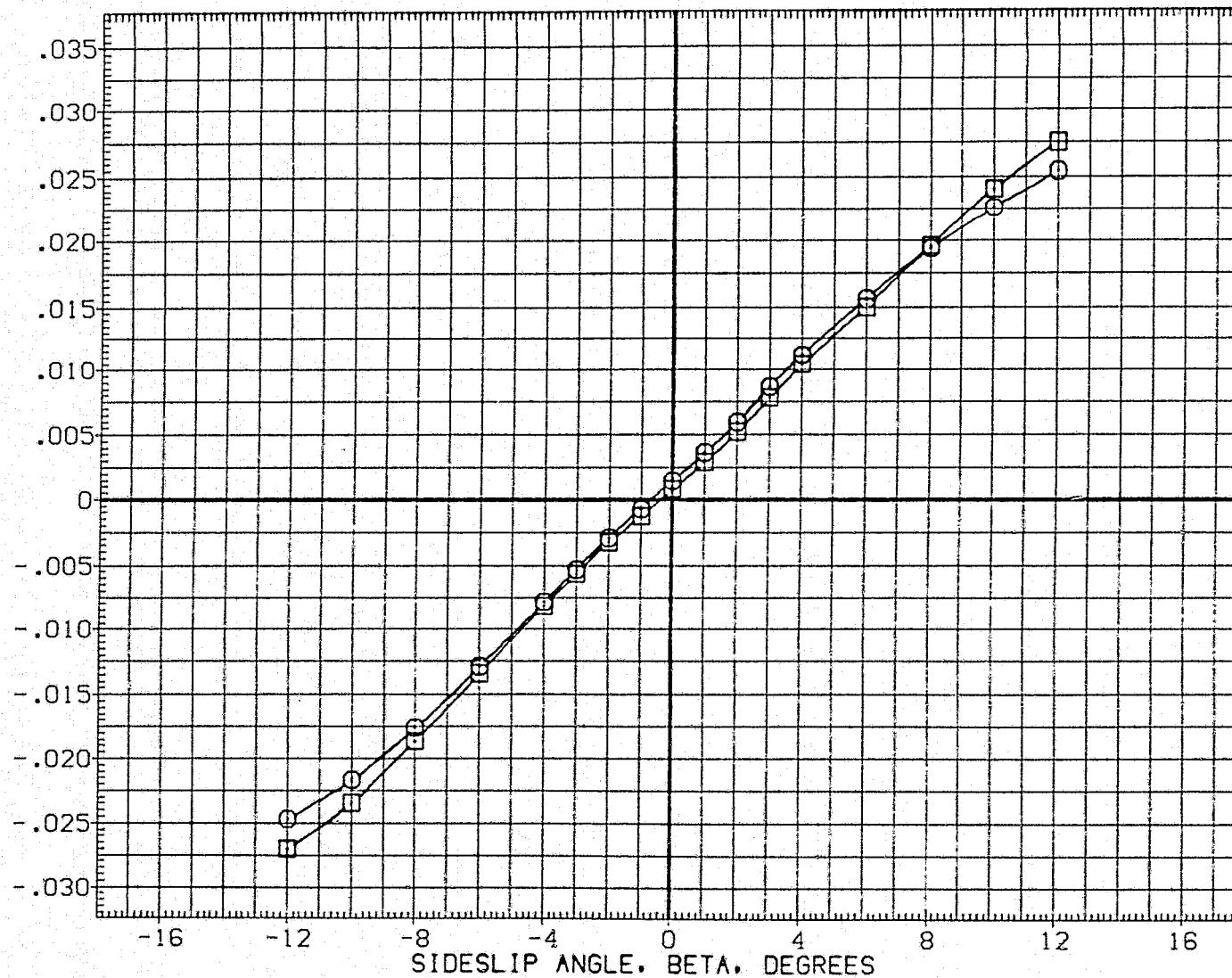


FIG. 253 747+ORB(8 DEG), EFFECT OF ORB ELEVONS, FLAPS UP LAUNCH

(B)MACH = .60

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM083) ○ CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM088) □ CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

ALPHA

STAB

SS-6

ORBELV

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

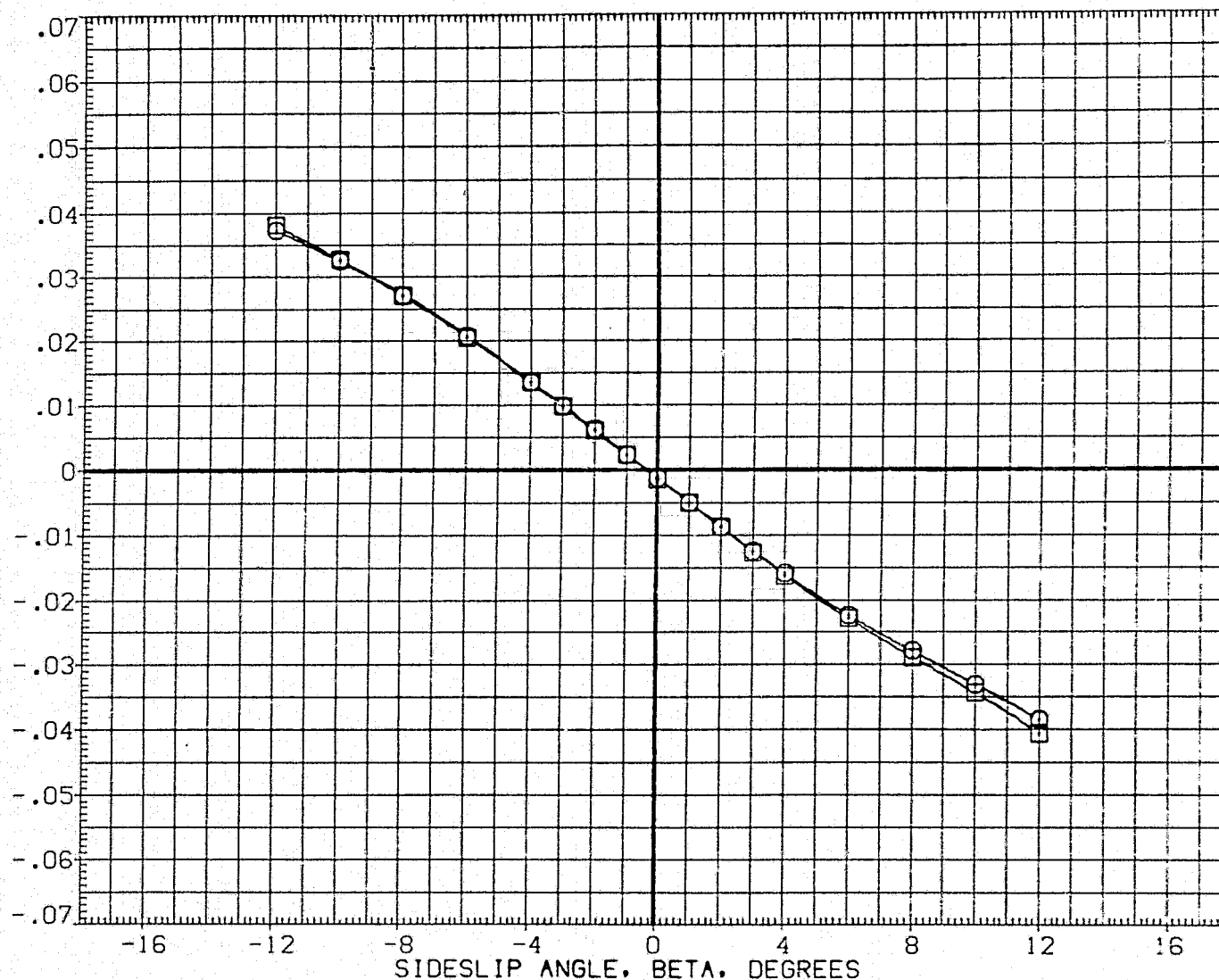




FIG. 253 747+ORB(8 DEG), EFFECT OF ORB ELEVONS, FLAPS UP LAUNCH

(A)MACH = .50

DA A SE1 SYMBOL CONFIGURATION DESCRIPTION

(R1M083)  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )  
 (R1M088)  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

ALPHA1

STAB

S5-6

ORBELV

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

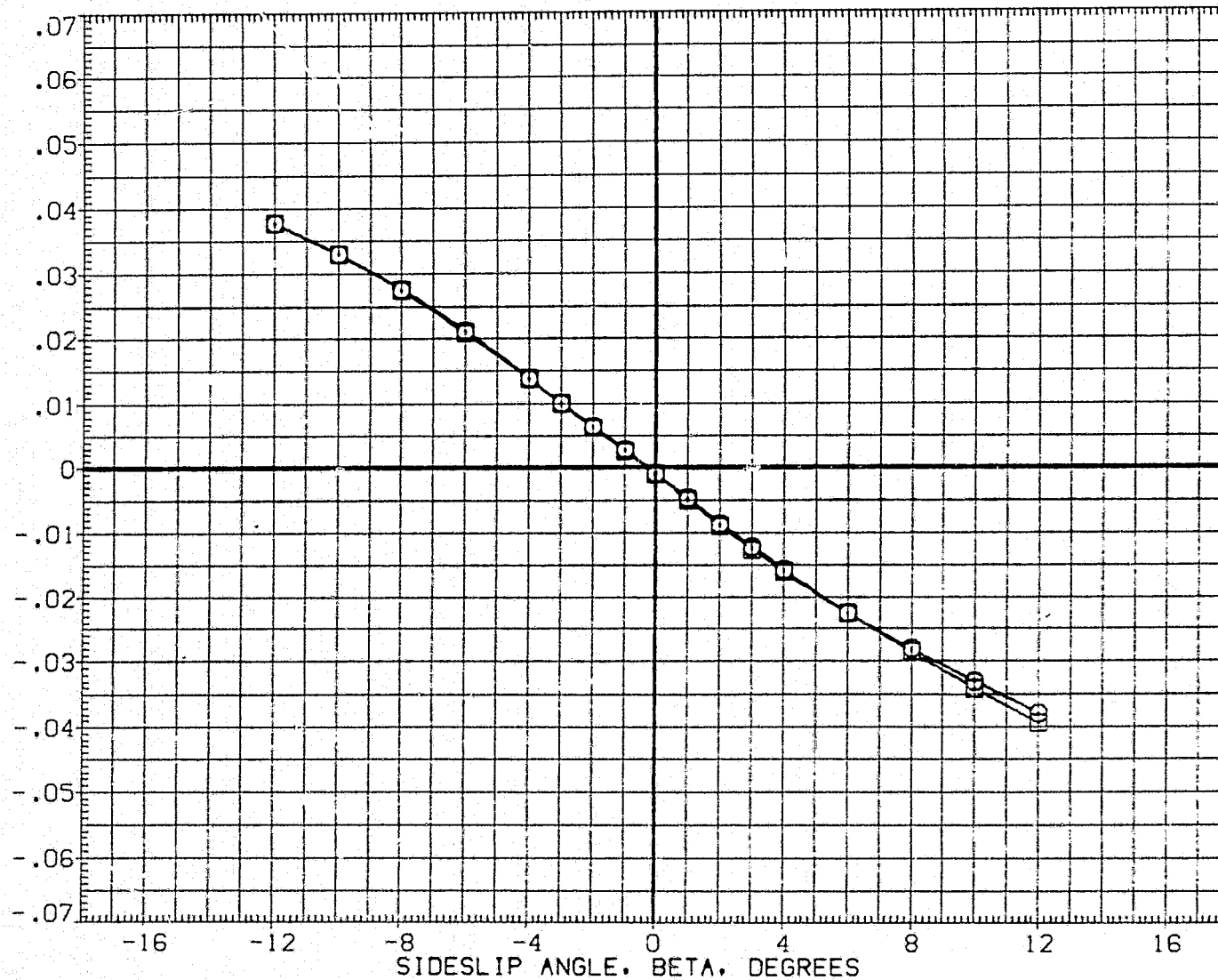


FIG. 253 747+ORB(8 DEG), EFFECT OF ORB ELEVONS, FLAPS UP LAUNCH

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION
(RGM118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	6.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT. LREF 327.8000 IN.
(RGM127)	CAS K1 FO H15.6 V9.1 (PLUS. ORB N0Z AT38.3)	6.000	-2.000	.000	4.000	BREF 2348.0000 IN. XMRP 1339.9100 IN. XC YMRP .0000 IN. YC ZMRP 190.7500 IN. ZC SCALE .0300

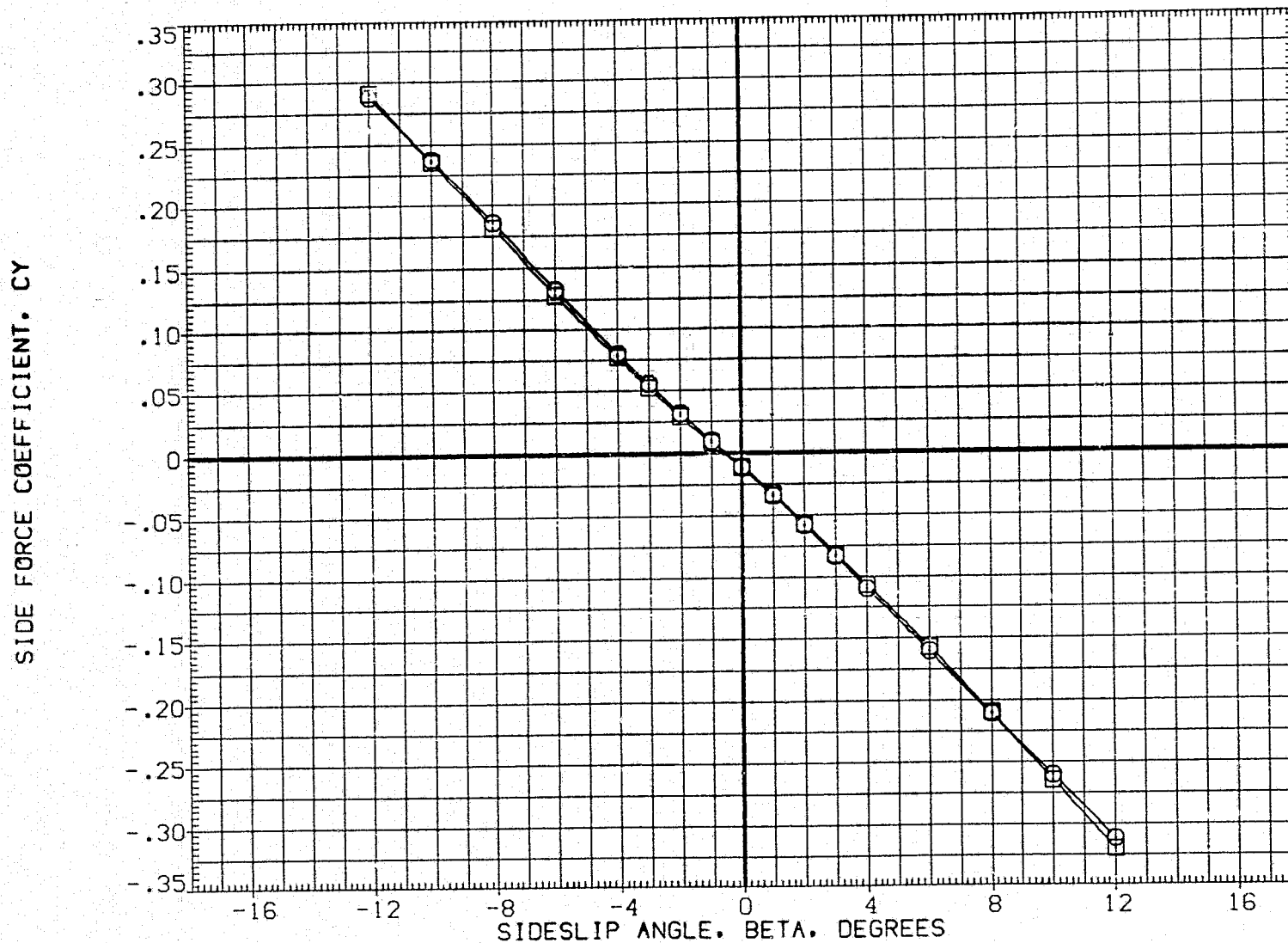


FIG. 254 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY  
(A)MACH = .30

DATA SET SYMBOL		CONFIGURATION DESCRIPTION				ALPHA1	STAB	SS-6	10RB	REFERENCE INFORMATION				
(RGM18)	□	CAS	K1	FO	H15.6	V9.1	(PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM127)	□	CAS	K1	FO	H15.6	V9.1	(PLUS. ORB NOZ AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
												BREF	2348.0000	IN.
												XMRP	1339.9100	IN. XC
												YMRP	.0000	IN. YC
												ZMRP	190.7500	IN. ZC
												SCALE	.0300	

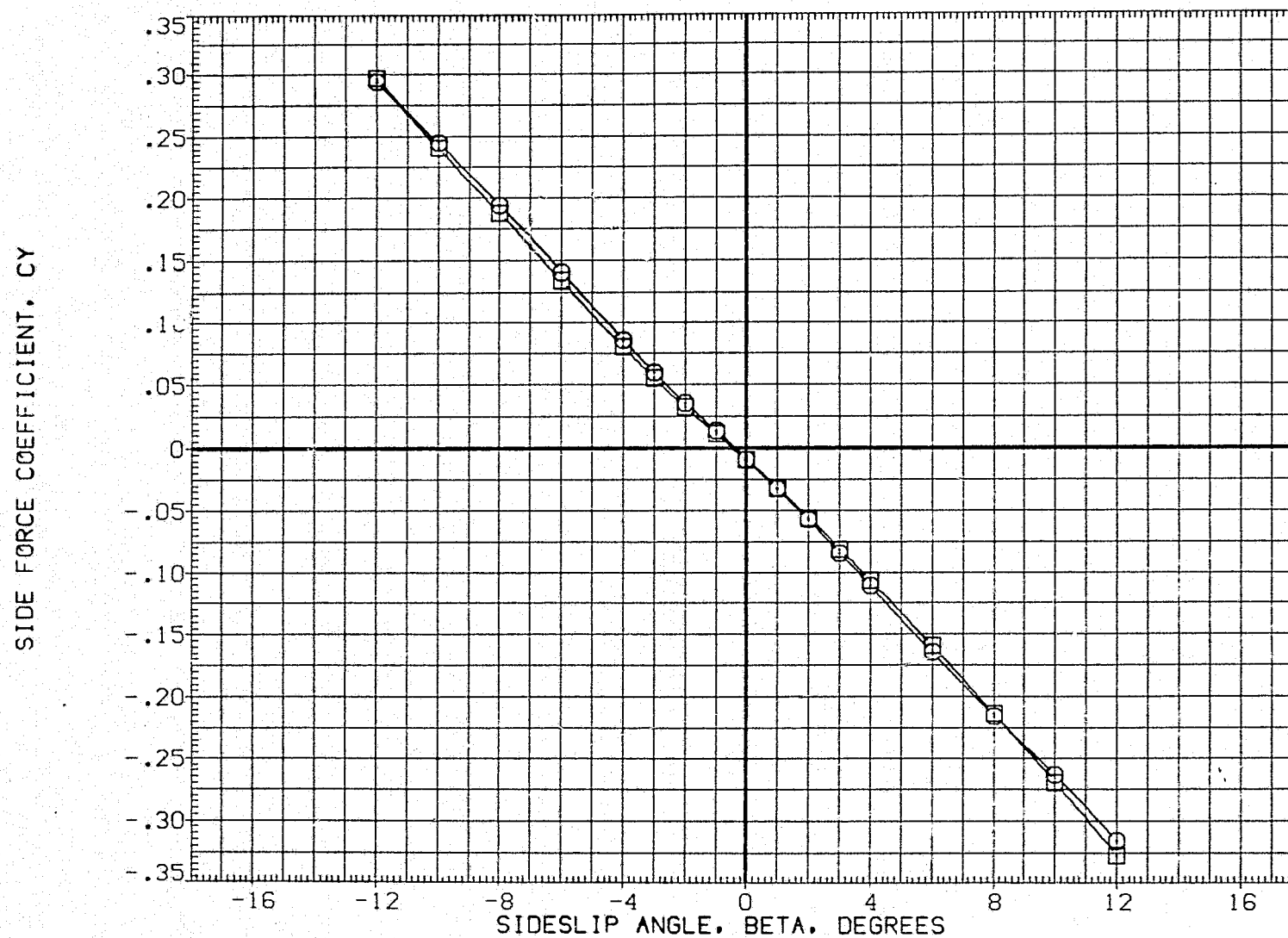


FIG. 254 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY  
(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	SS-6	IORB	REFERENCE INFORMATION
(R3M118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	6.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT.
(R3M127)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3)	6.000	-2.000	.000	4.000	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XM RP 1339.9100 IN. XC
						YM RP .0000 IN. YC
						ZM RP 190.7500 IN. ZC
						SCALE .0300

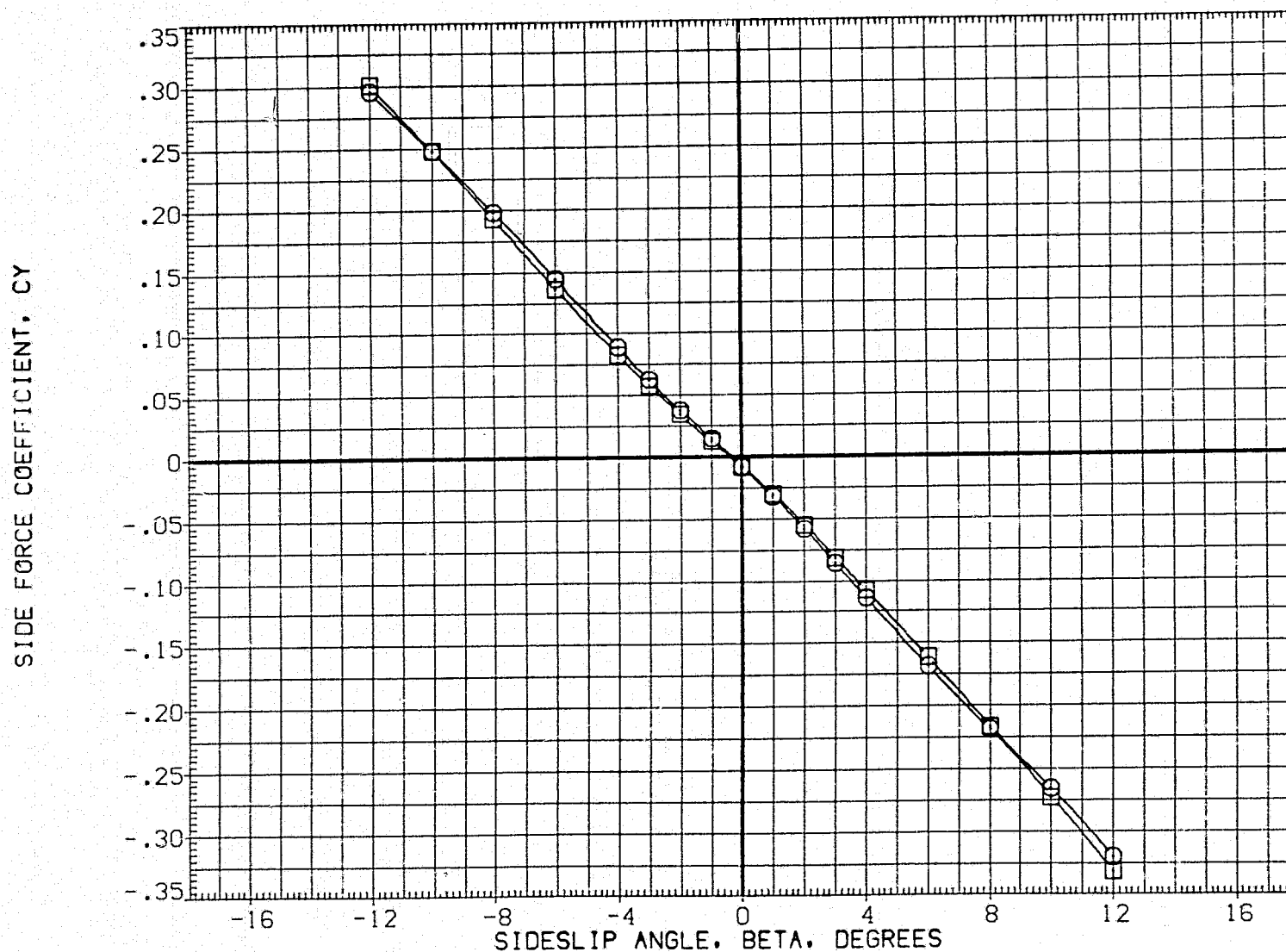


FIG. 254 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY  
 (C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM118) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM127) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )

ALPHA1 STAB S5-6 IORB  
 6.000 -2.000 .000 4.000  
 6.000 -2.000 .000 4.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

SIDE FORCE COEFFICIENT, CY

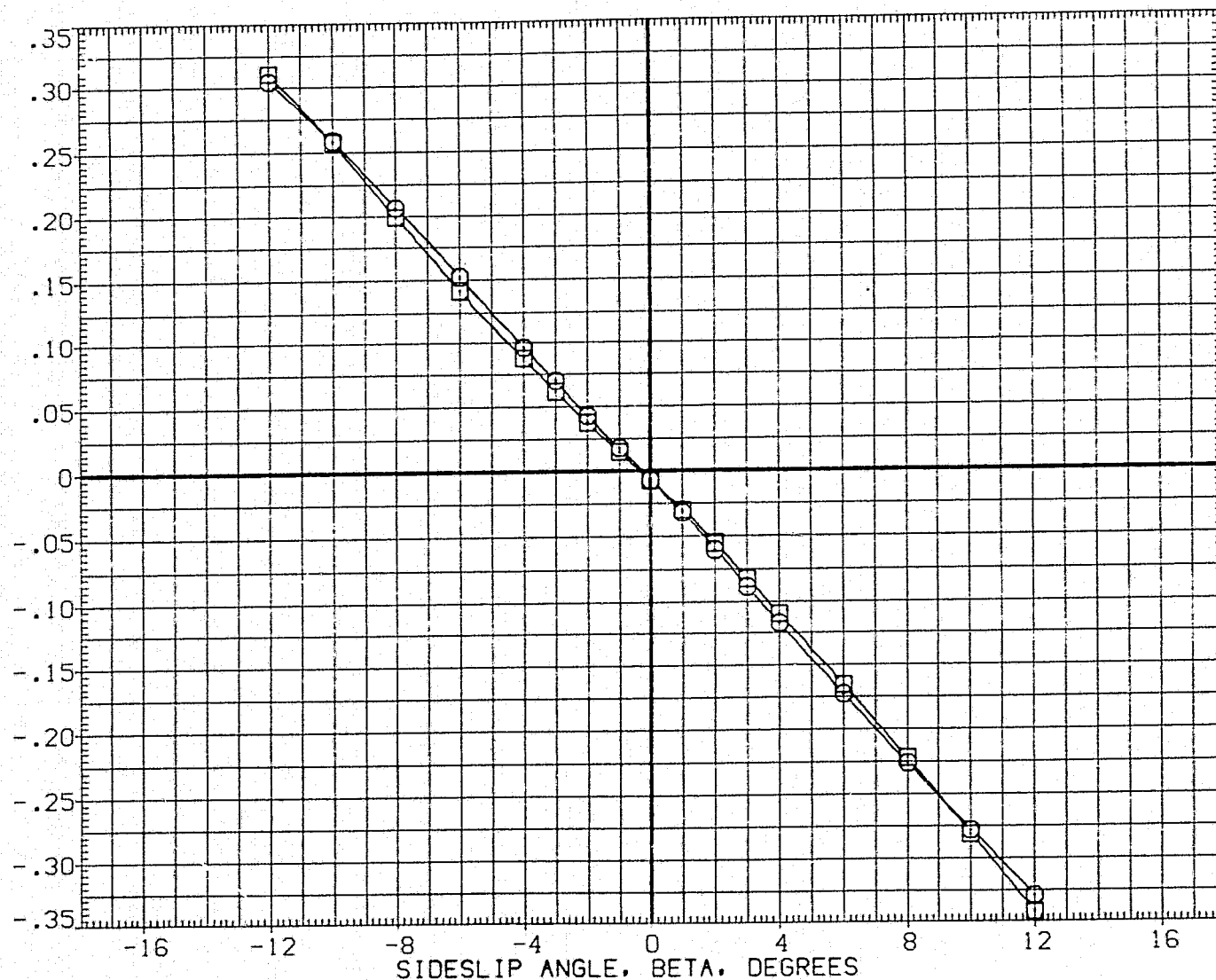


FIG. 254 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY  
 (D)MACH = .70

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGM118)	○	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM127)	□	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
							BREF	2348.0000	IN.
							XMRP	1339.9100	IN. XC
							YMRP	.0000	IN. YC
							ZMRP	190.7500	IN. ZC
							SCALE	.0300	

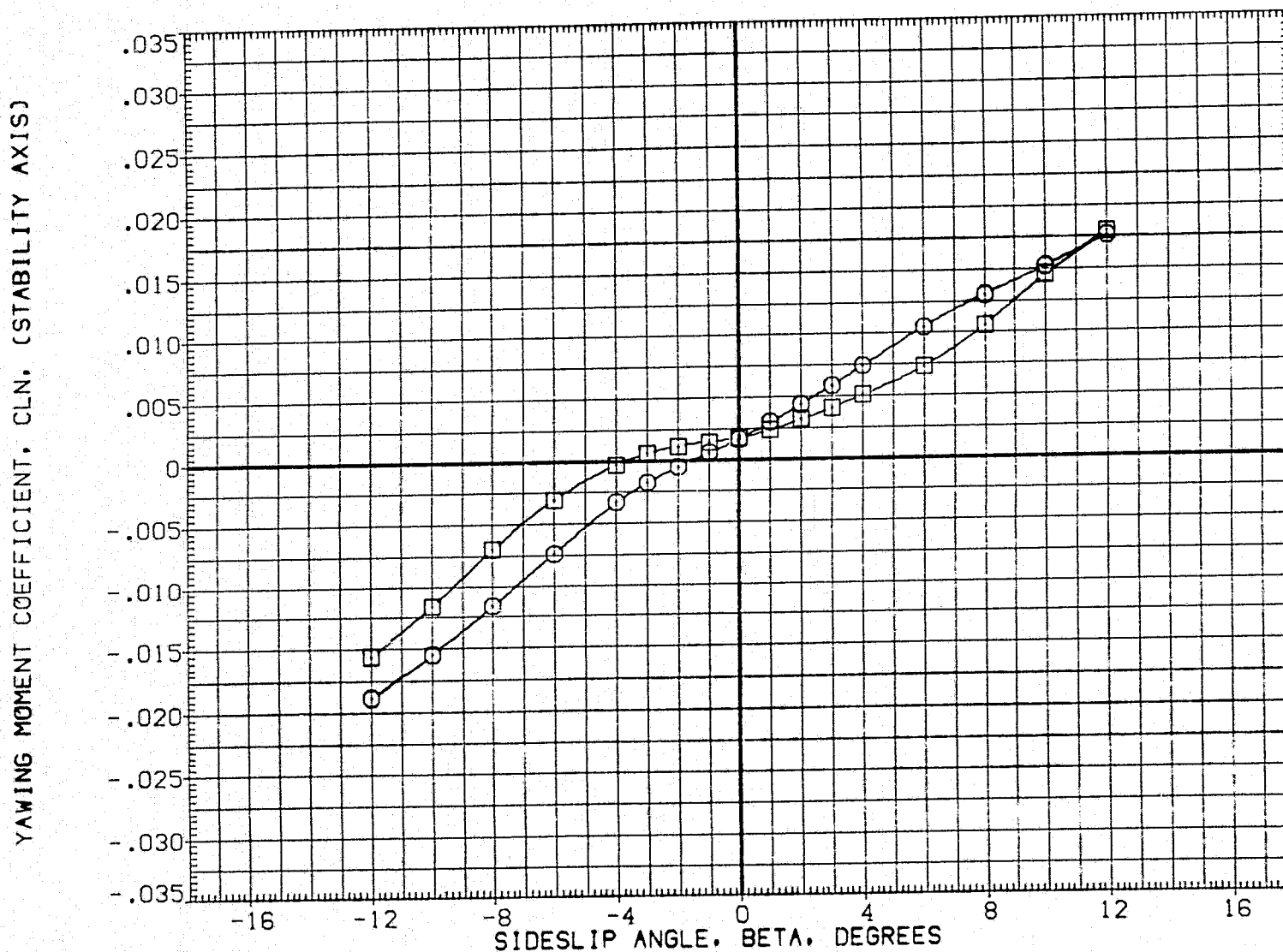


FIG. 254 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY  
(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA I	STAB	SS-6	IORB	REFERENCE INFORMATION
(RGM118) ○	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT. LREF 327.8000 IN.
(RGM127) □	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )	6.000	-2.000	.000	4.000	BREF 2348.0000 IN. XMRP 1339.9100 IN. XC YMRP .0000 IN. YC ZMRP 190.7500 IN. ZC SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

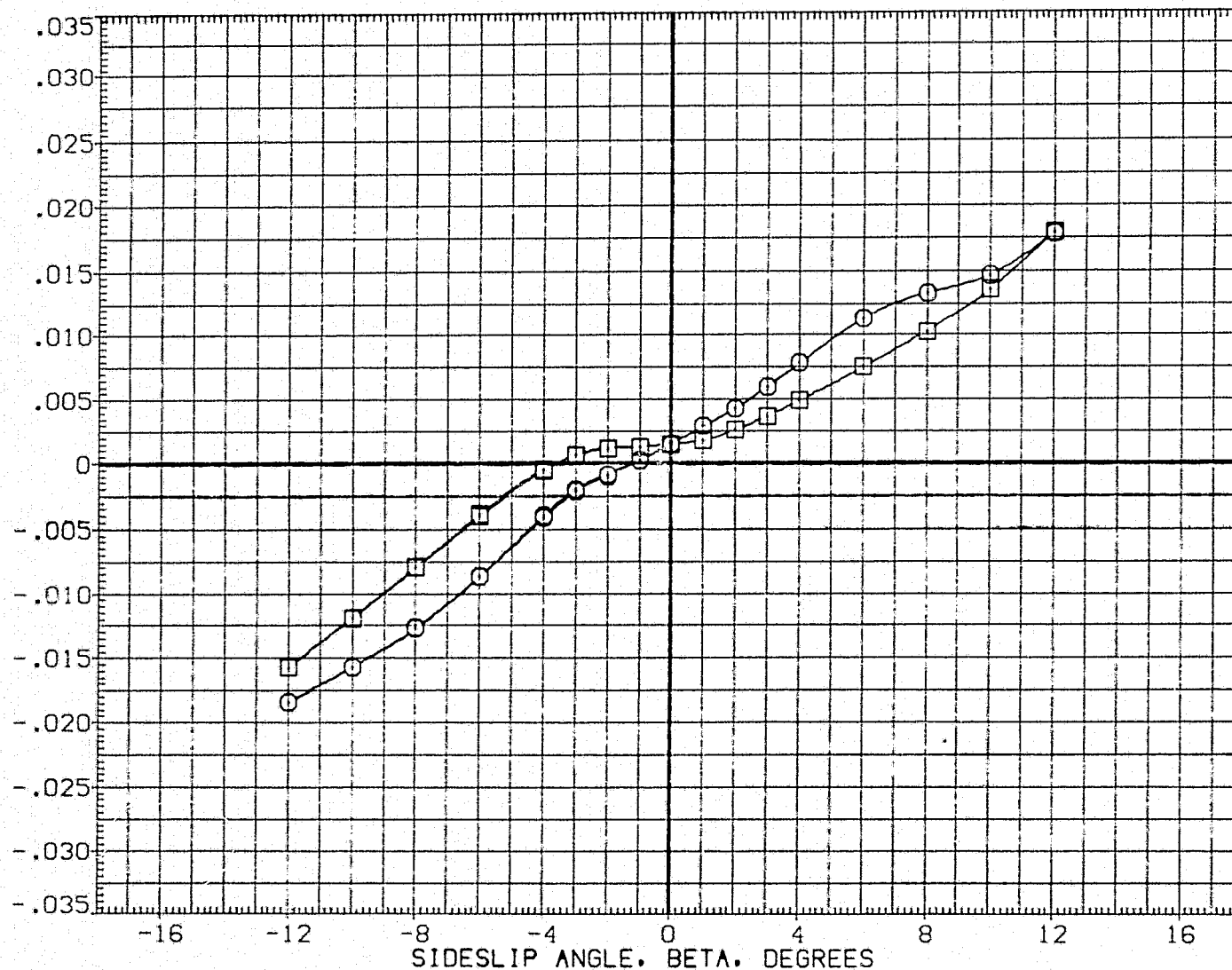


FIG. 254 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY  
(B)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION
(RGM118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT.
(RGM127)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )	6.000	-2.000	.000	4.000	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

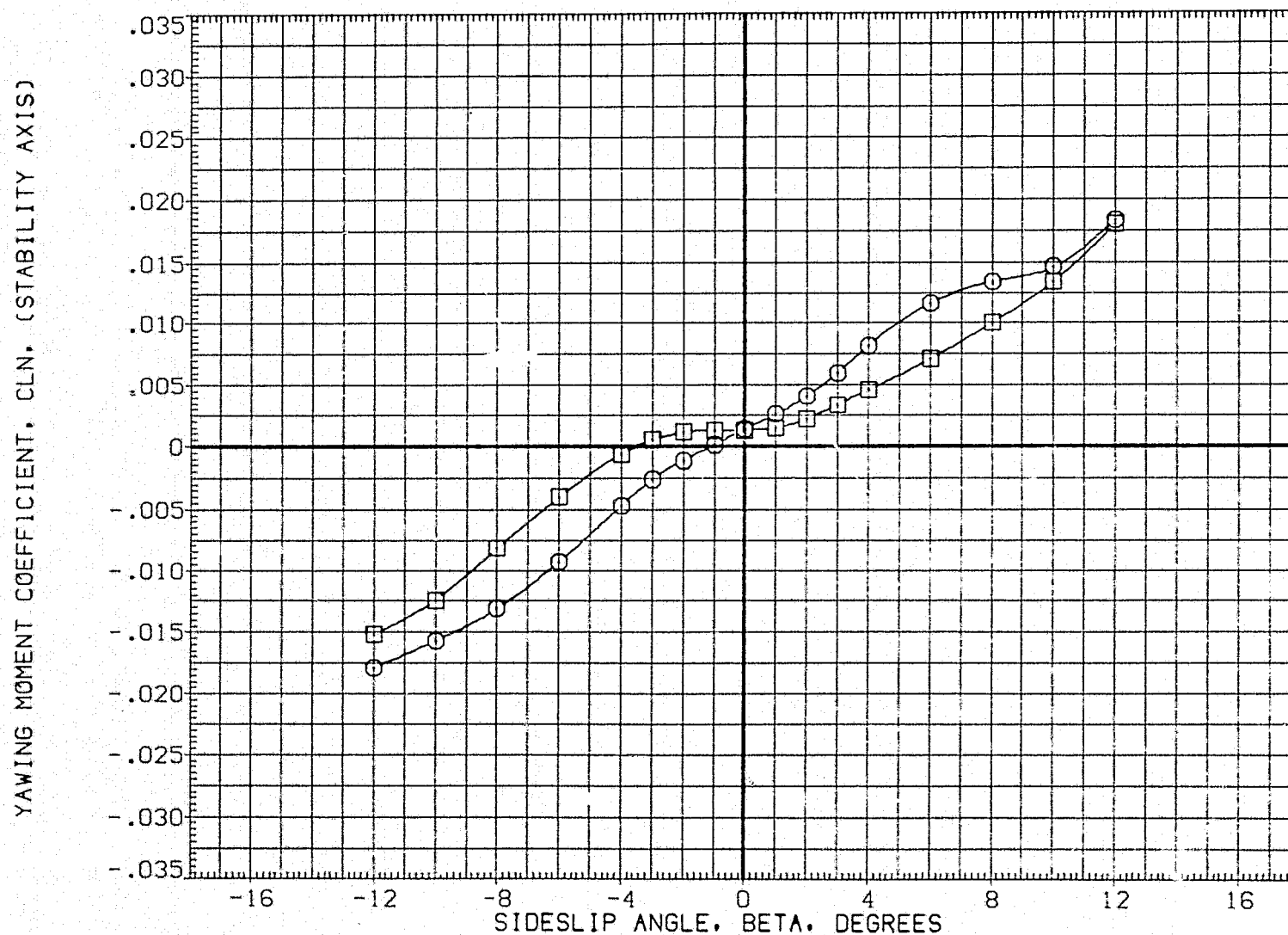


FIG. 254 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY  
(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RUM118)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000	50. FT.
(RUM127)	CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

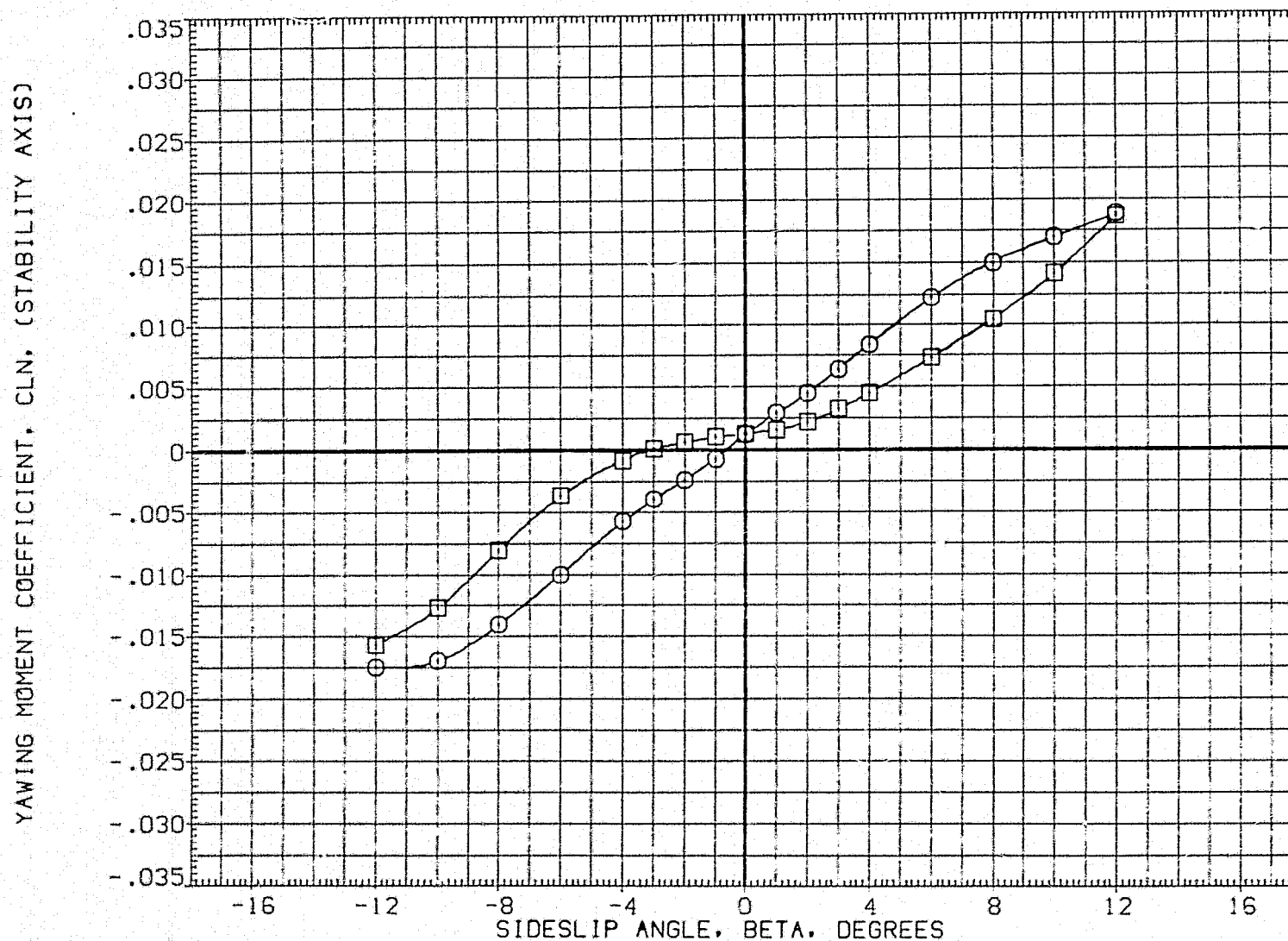


FIG. 254 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY  
(O)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	SS-6	IORB	REFERENCE INFORMATION
(RGM118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT.
(RGM127)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )	6.000	-2.000	.000	4.000	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

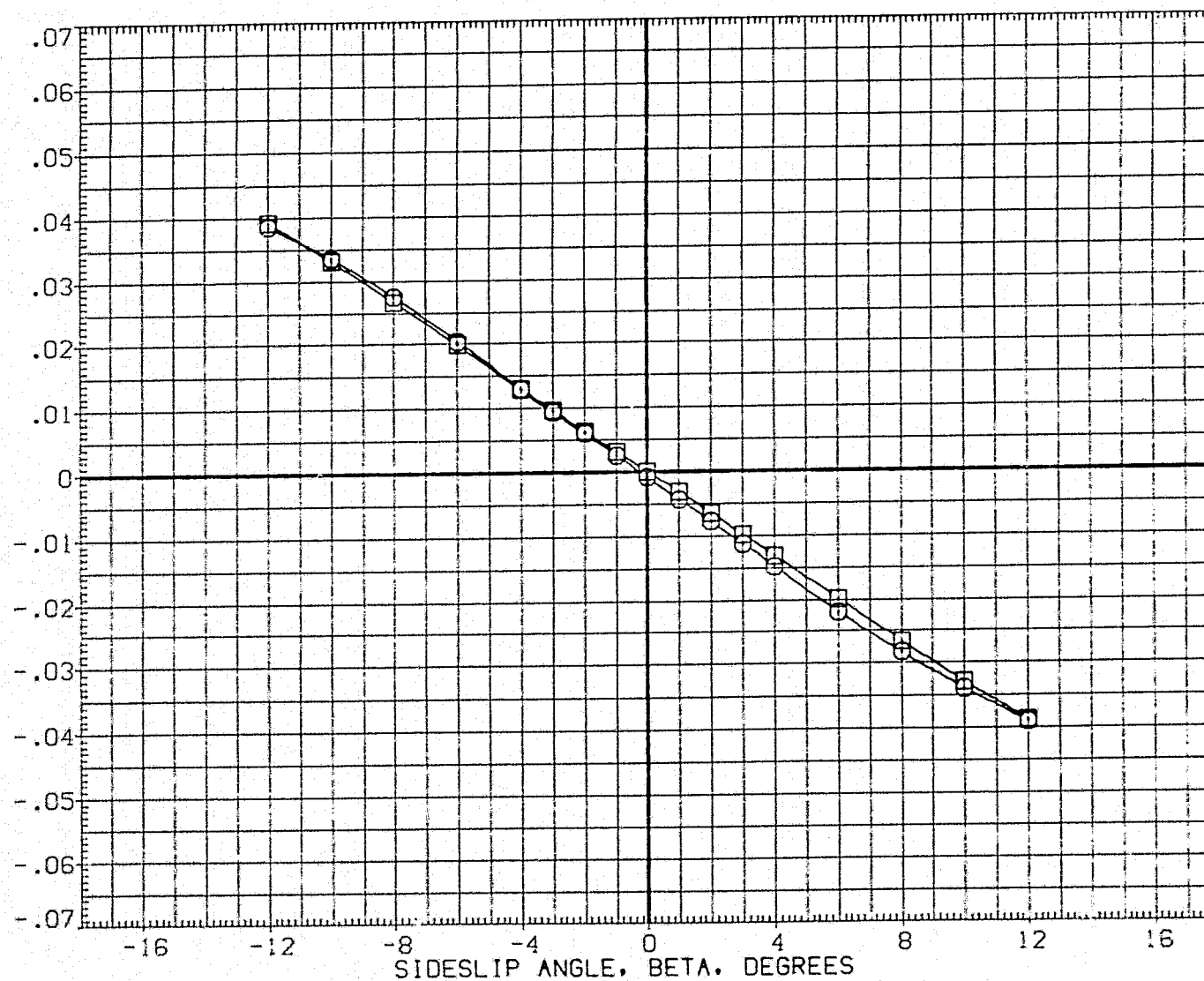


FIG. 254 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	S5-6	10RB	REFERENCE INFORMATION		
(RM118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RM127)	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )	6.000	-2.000	.000	4.000	LREF	327.8223	IN.
						BREF	2348.0000	IN.
						XMRP	1338.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

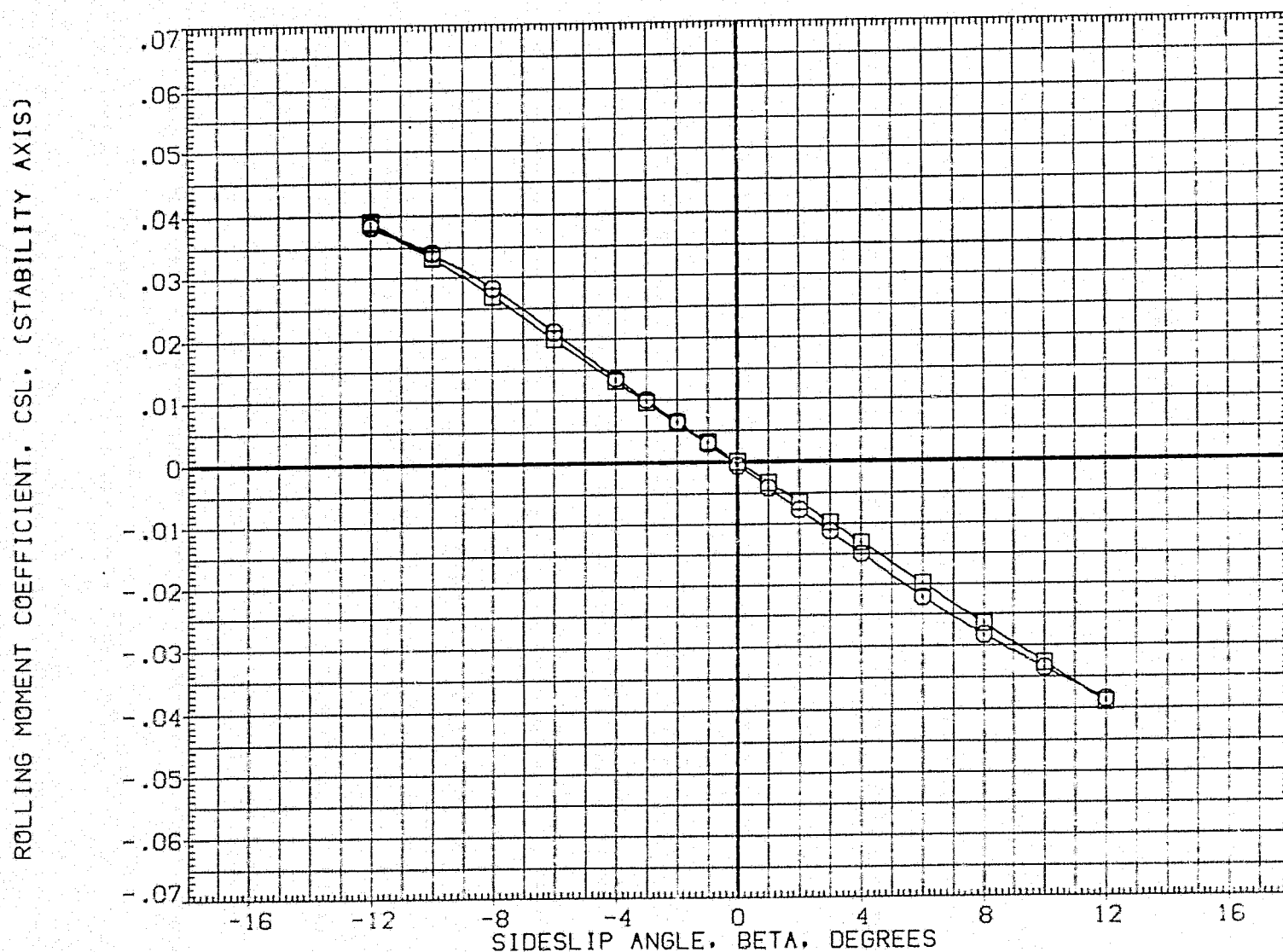


FIG. 254 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY  
(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION
(RGM118)	CAS KI FO HIS.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT.
(RGM127)	CAS KI FO HIS.6 V9.1 (PLUS. ORB N0Z AT38.3 )	6.000	-2.000	.000	4.000	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRF 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

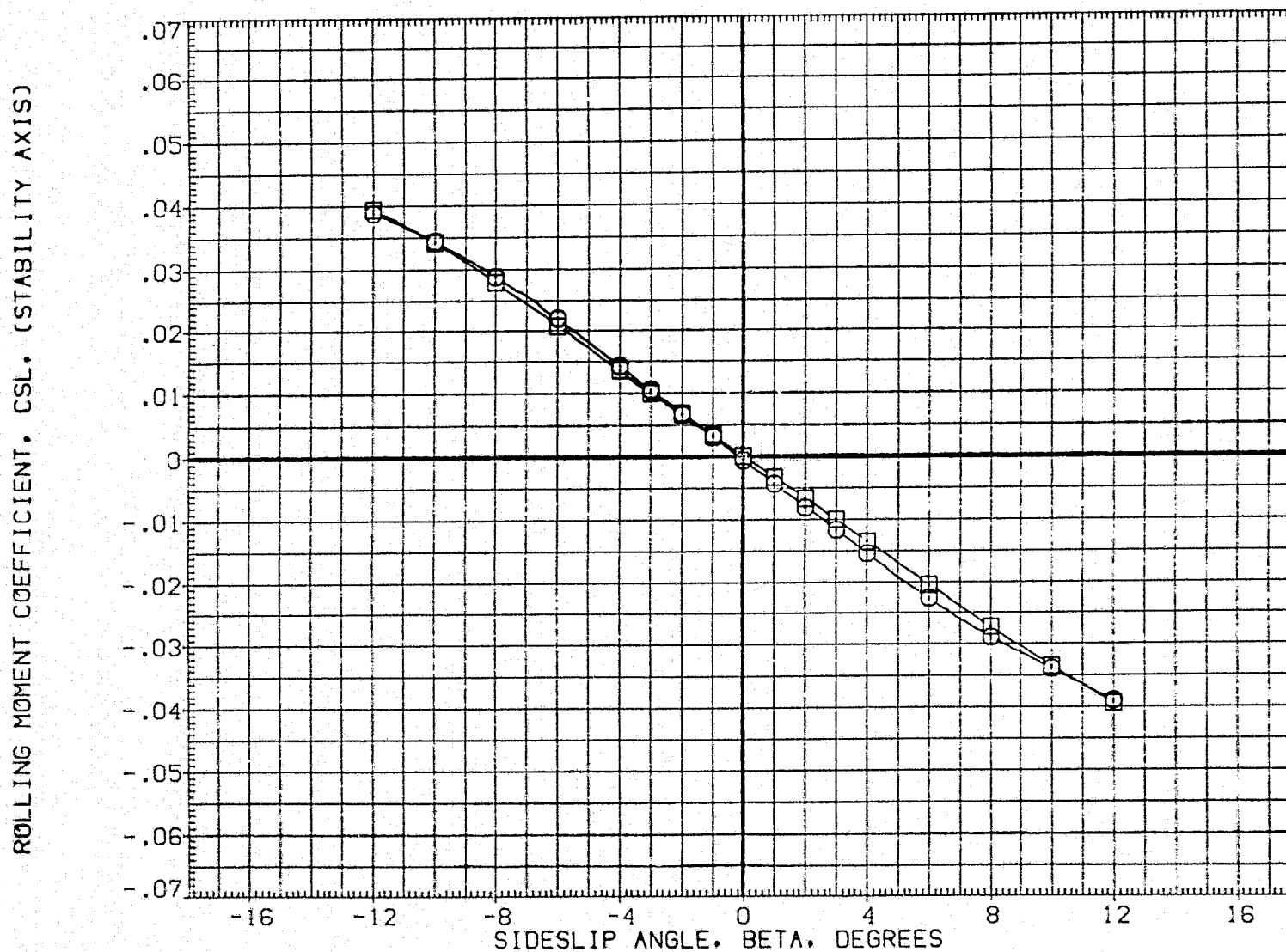


FIG. 254 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY  
(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION
(RGM118)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC'S AT38.3 )	6.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT.
(RGM127)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.3 )	6.000	-2.000	.000	4.000	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

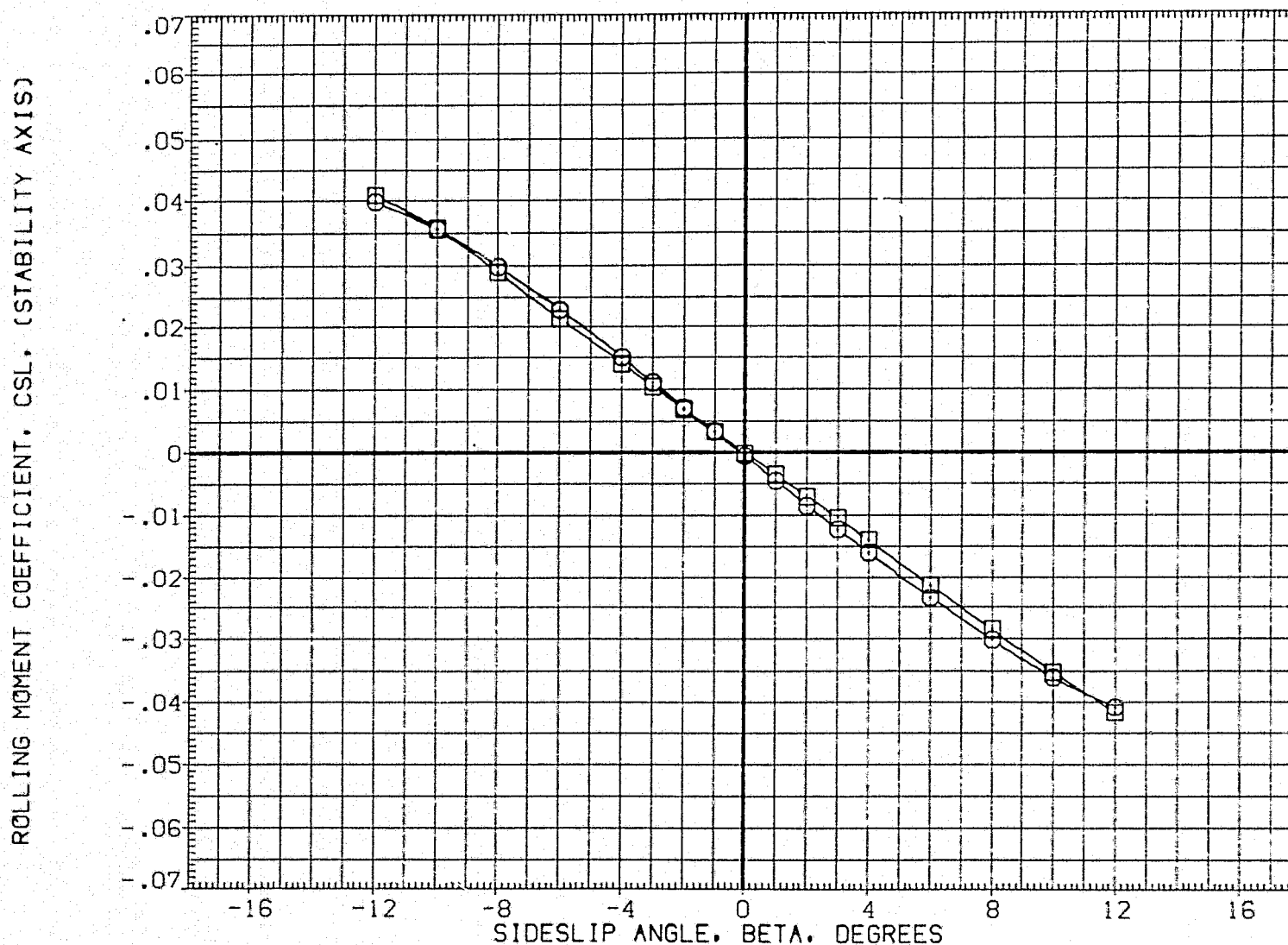


FIG. 254 747+ORB(4 DEG), EFFECT OF TAIL CONE, FLAPS UP FERRY

(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM083) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )  
 (RGM093) ☐ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

ALPHA1 STAB S5-6 10RB  
 6.000 1.000 20.000 7.850  
 6.000 1.000 20.000 7.850

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

SIDE FORCE COEFFICIENT, CY

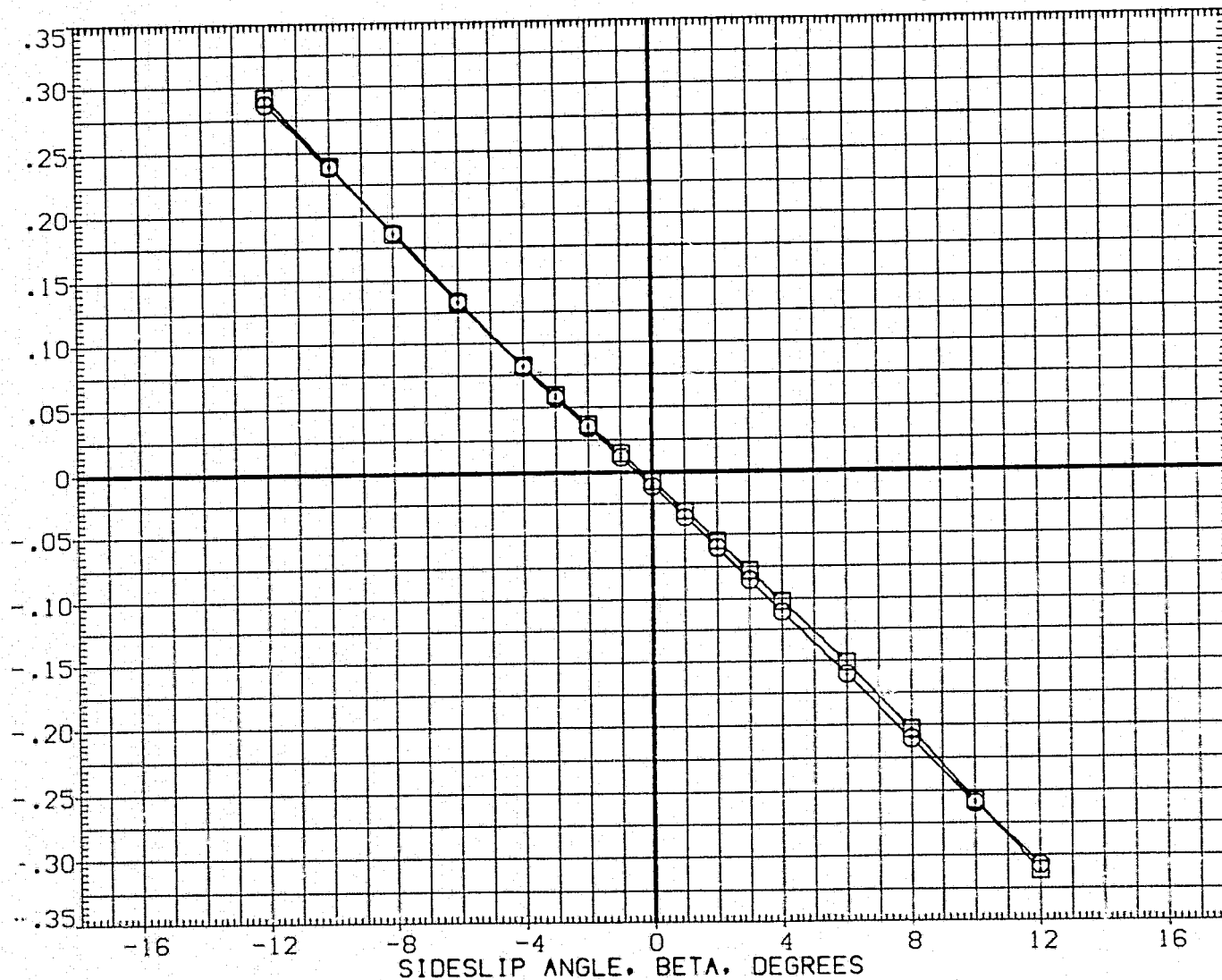


FIG. 255 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	IORB	REFERENCE INFORMATION
(RGM083)	□ CAS K1 FO H15.6 V.1 (PLUS. ORB TC5 AT38.2)	6.000	1.000	20.000	7.850	SREF 5500.0000 SQ.FT.
(RGM093)	□ CAS K1 FO H15.6 V.1 (PLUS. ORB NOZ AT38.2)	6.000	1.000	20.000	7.850	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

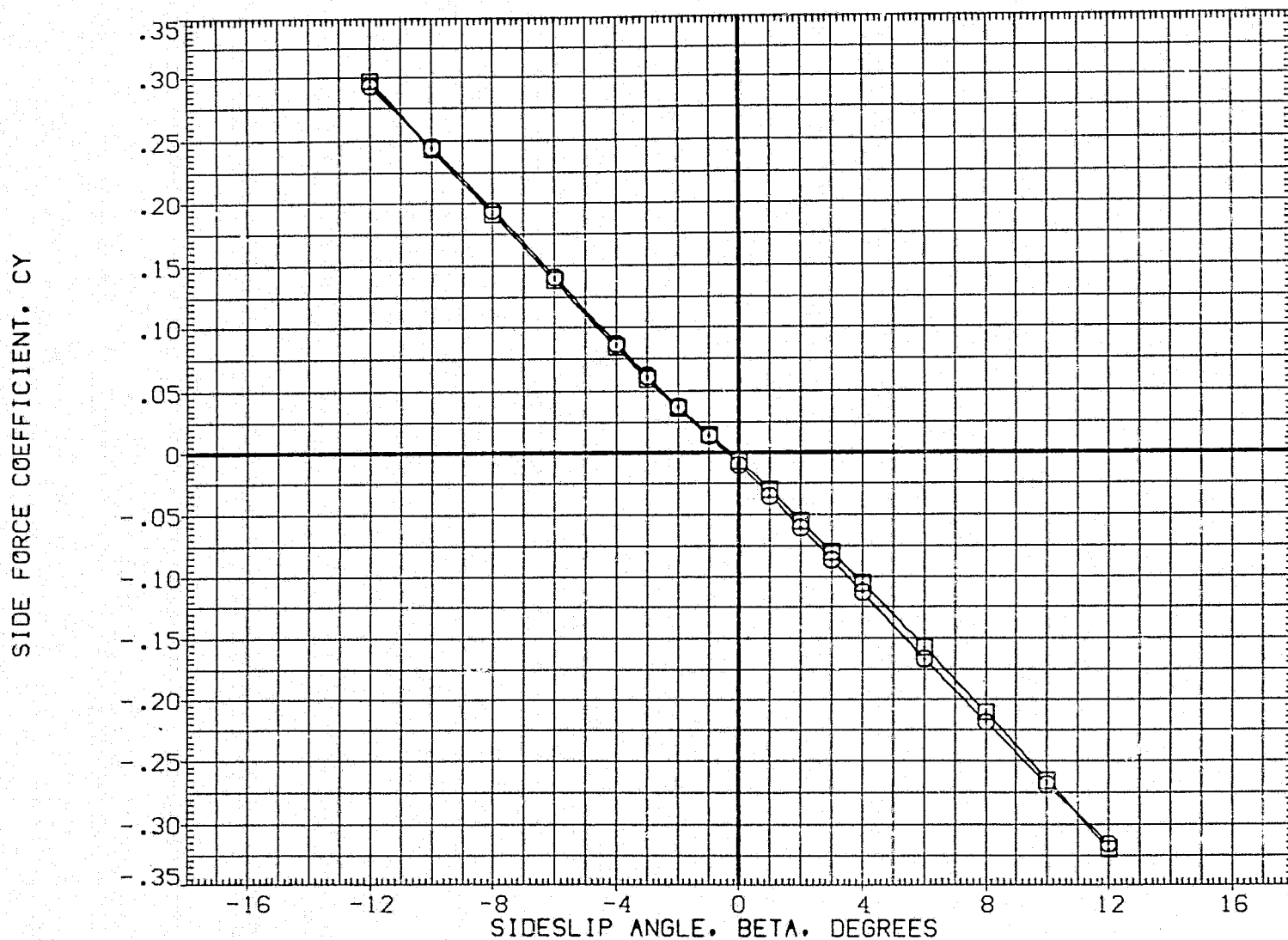


FIG. 255 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH

(B)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA I	STAB	S5-6	10RB	REFERENCE INFORMATION
(RGM083)	○ CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	20.000	7.850	SREF 5500.0000 SQ.FT.
(RGM093)	□ CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	6.000	1.000	20.000	7.850	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

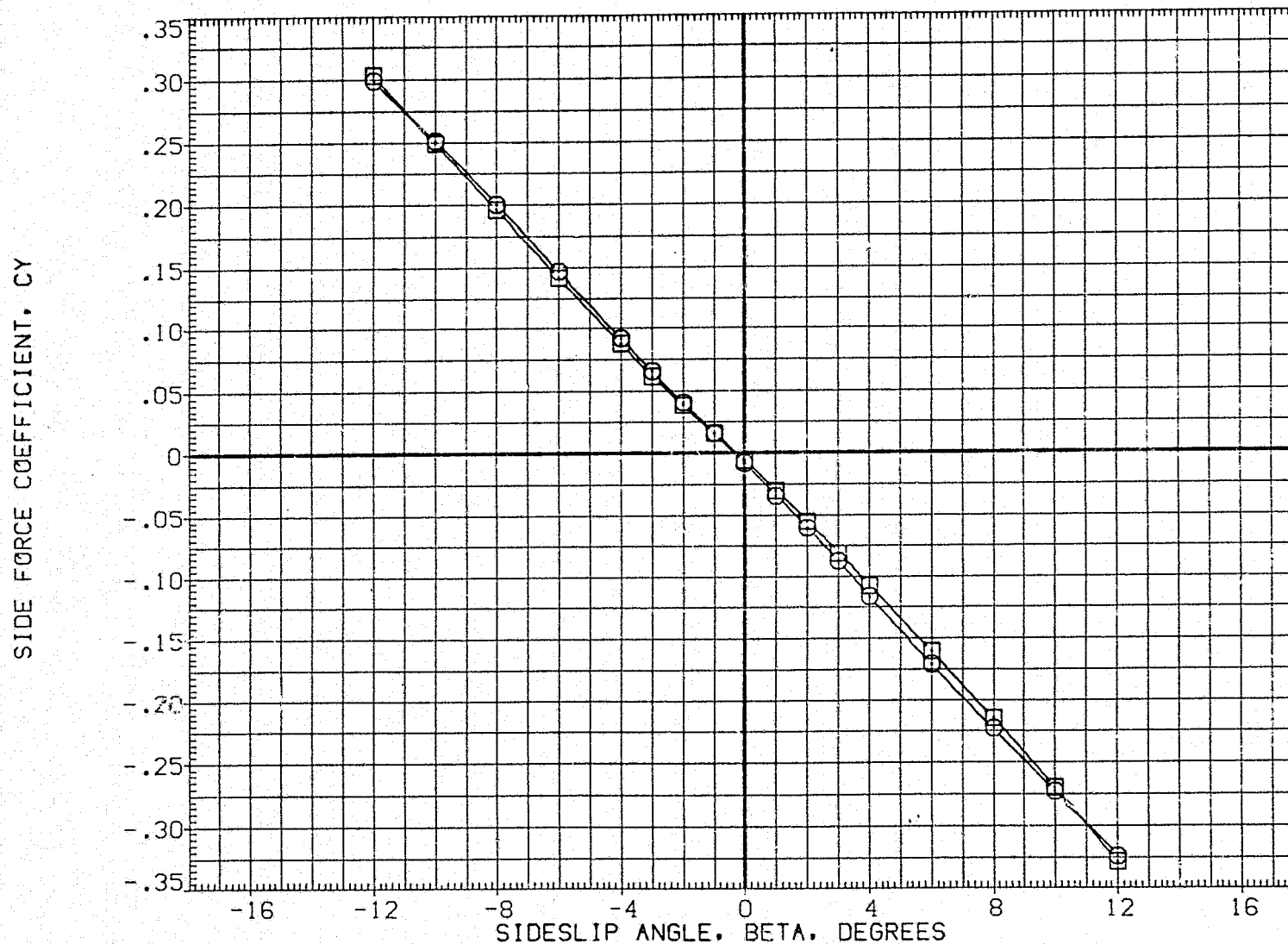


FIG. 255 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM083)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )  
 (RGM093)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

ALPHA

STAB

SS-6

IORB

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

SIDE FORCE COEFFICIENT, CY

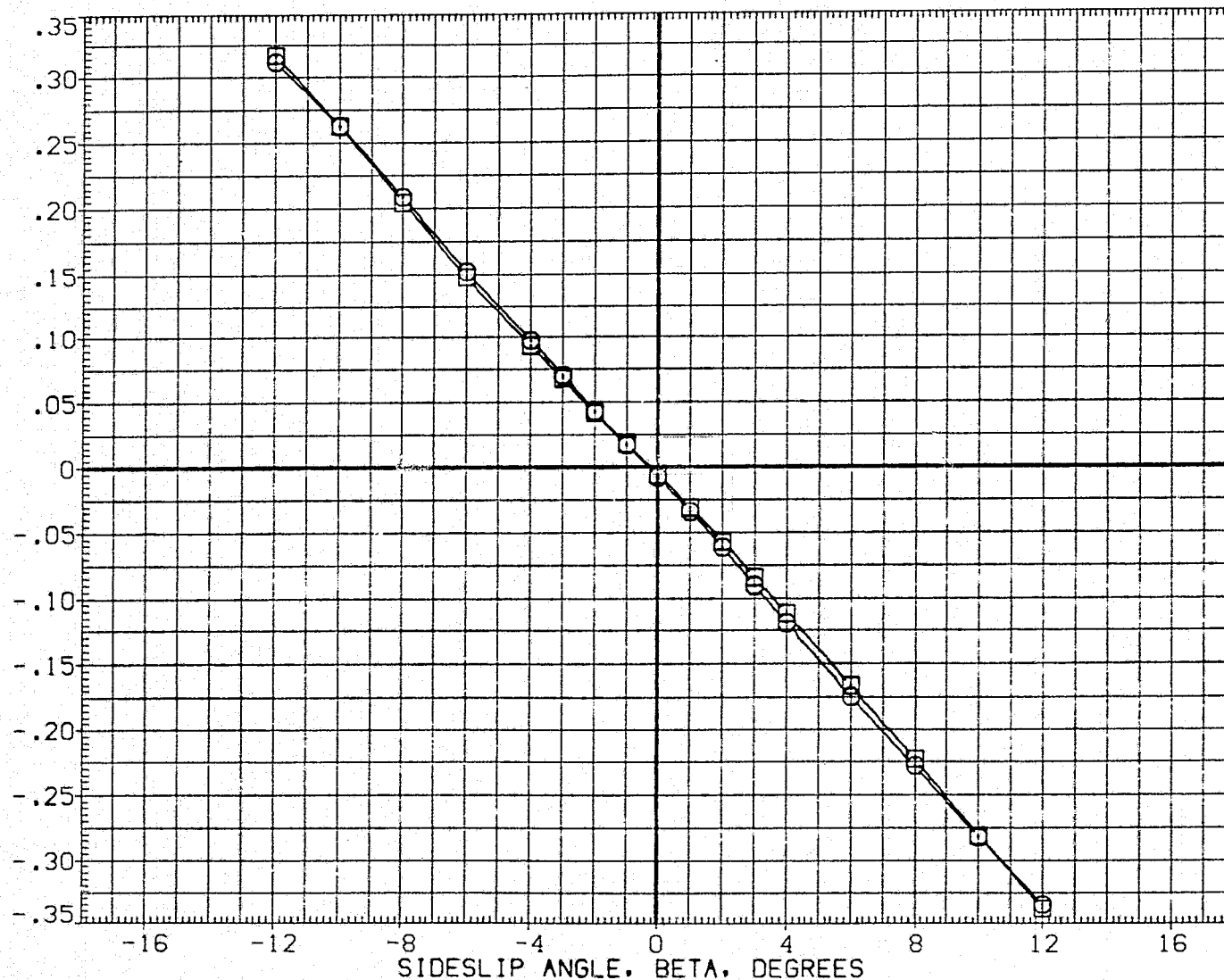


FIG. 255 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGMO83)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	20.000	7.850	SREF	5500.0000	SQ.FT.
(RGMO93)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	6.000	1.000	20.000	7.850	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

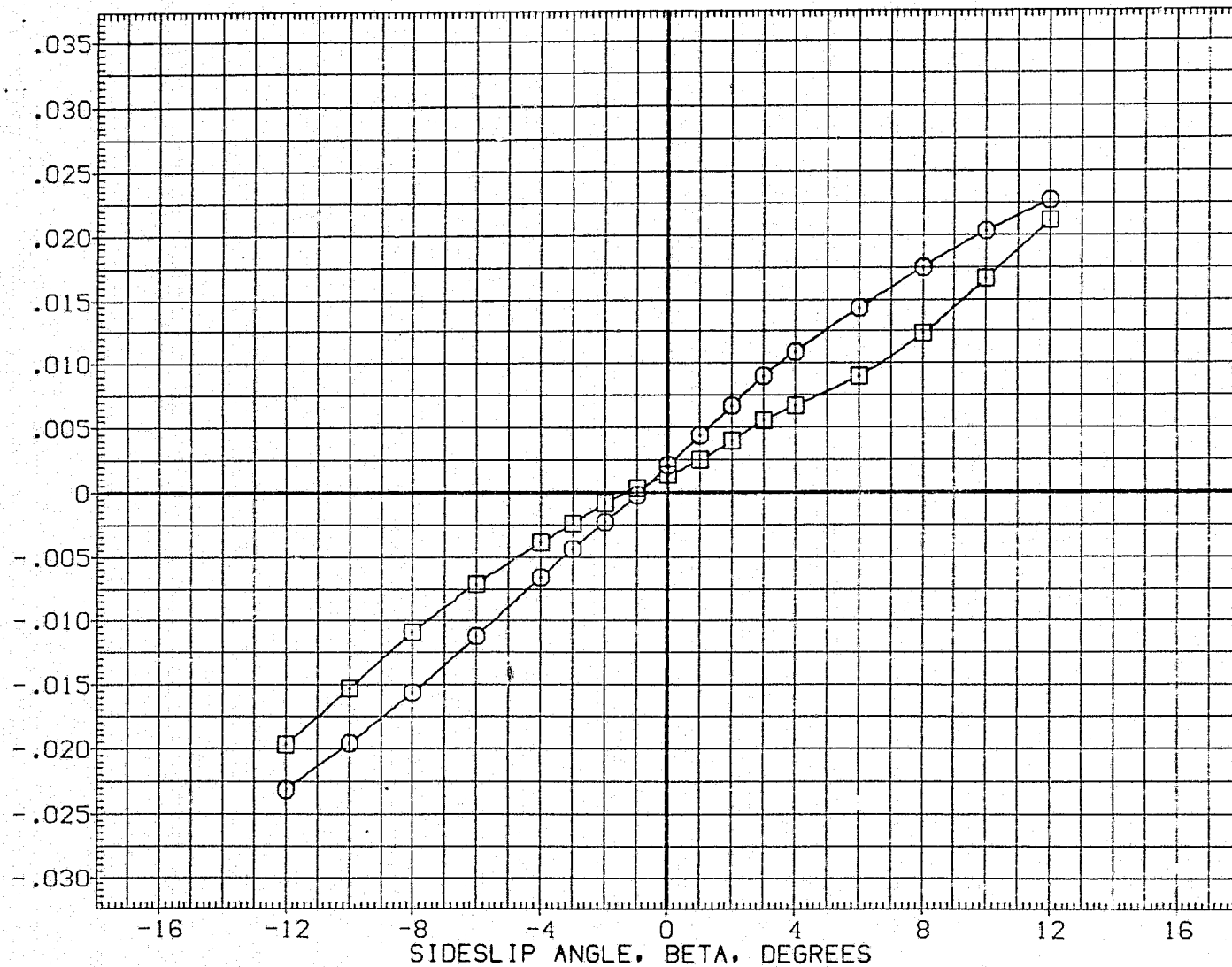


FIG. 255 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH  
(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	10RB	REFERENCE INFORMATION
(RGM093) <input type="checkbox"/>	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	20.000	7.850	SREF 5500.0000 SQ.FT. LREF 327.8000 IN. BREF 2348.0000 IN. XMRP 1339.9100 IN. XC YMRP .0000 IN. YC ZMRP 190.7500 IN. ZC SCALE .0300
(RGM093) <input type="checkbox"/>	CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	6.000	1.000	20.000	7.850	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

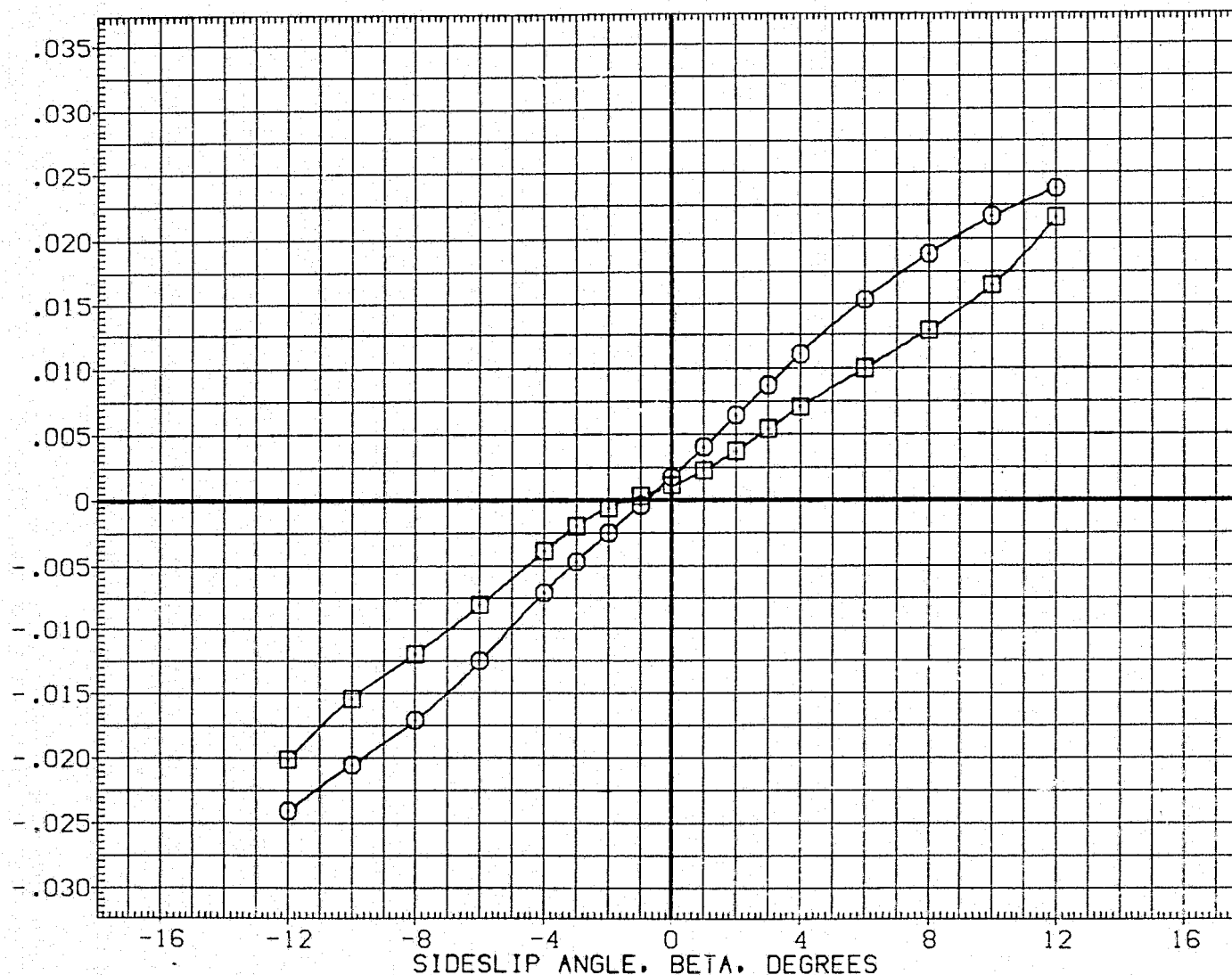


FIG. 255 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	S5-6	10RB	REFERENCE INFORMATION		
(RJM083)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	20.000	7.850	SREF	5500.0000	SQ.FT.
(RJM093)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	6.000	1.000	20.000	7.850	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

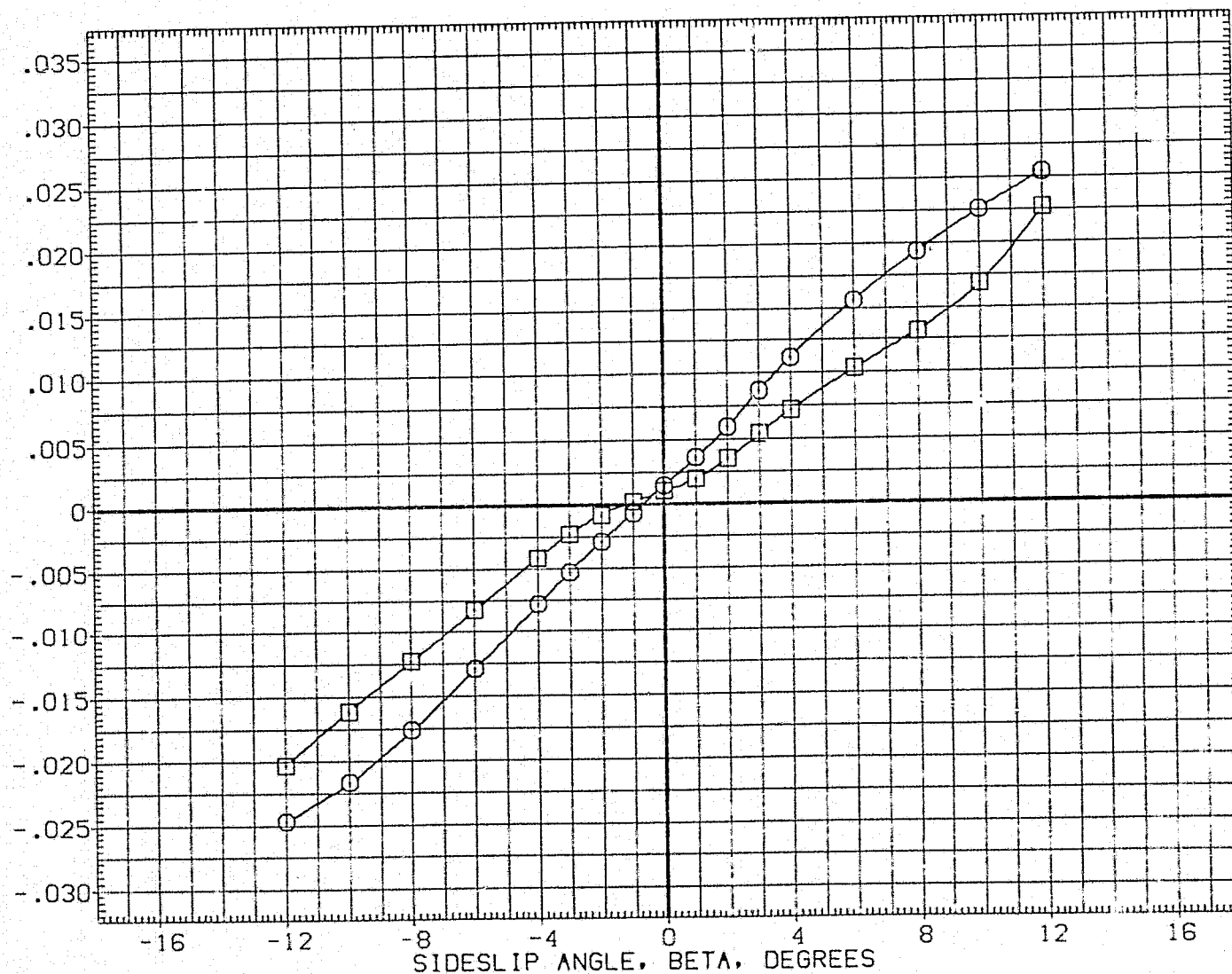


FIG. 255 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH  
(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM083)	CAS K1 FD H15.6 V9.1 (PLUS. CRB TC5 AT38.2 )
(RGM093)	CAS K1 FD H15.6 V9.1 (PLUS. CRB NOZ AT38.2 )

ALPHA1	STAB	S5-6	IORB
6.000	1.000	20.000	7.850
6.000	1.000	20.000	7.850

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.8000 IN.
BREF	2348.0000 IN.
XMRP	1339.9100 IN. XC
YMRP	.0000 IN. YC
ZMRP	190.7500 IN. ZC
SCALE	.0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

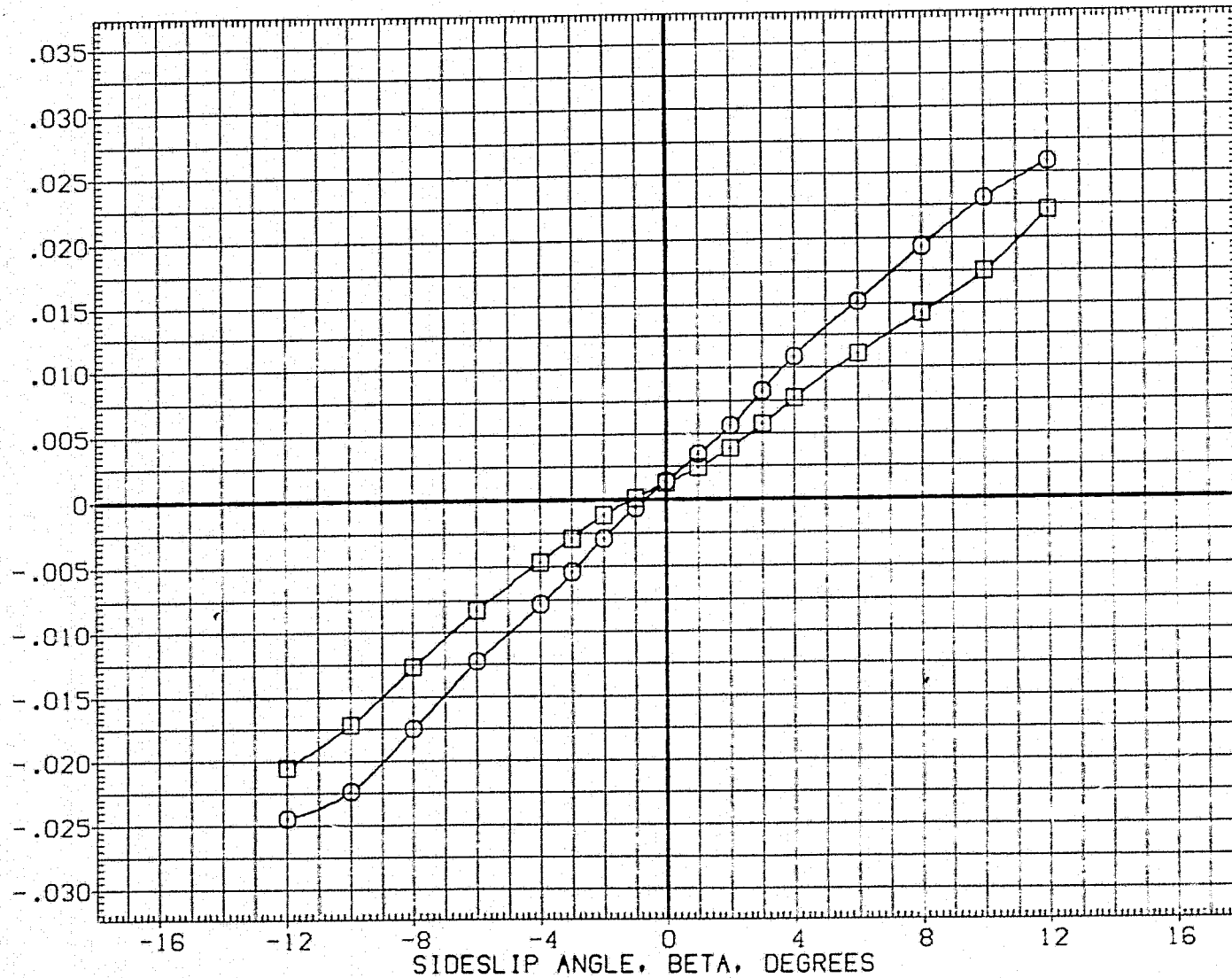


FIG. 255 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH

(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM083)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )  
 (RGM093)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )

ALPHA I

STAB

S5-6

IORB

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

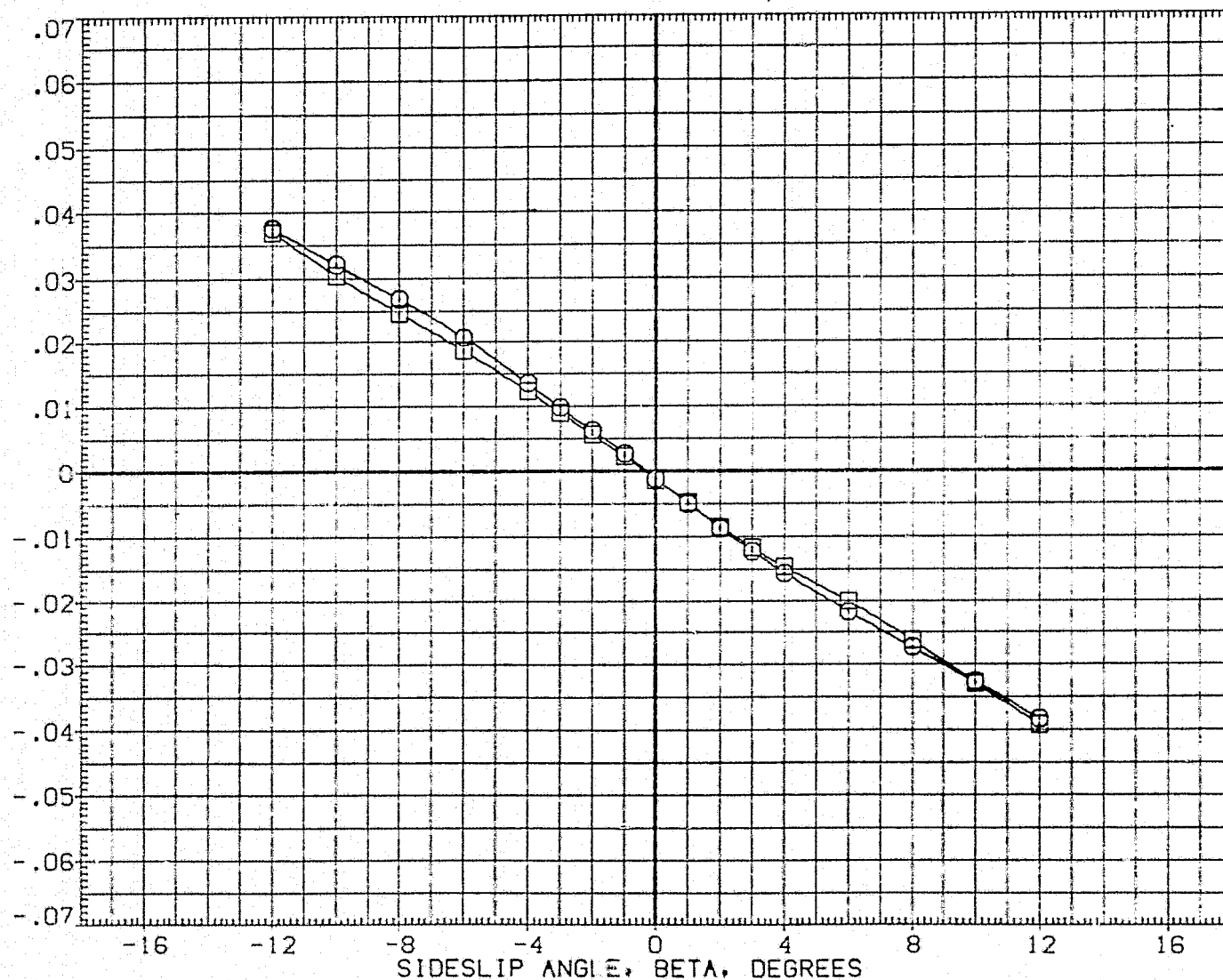


FIG. 255 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	SS-6	IORB	REFERENCE INFORMATION
(RGM083)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	6.000	1.000	20.000	7.850	SREF 5500.0000 SQ.FT. LREF 327.8000 IN.
(RGM093)	CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	6.000	1.000	20.000	7.850	BREF 2348.0000 IN. XMRP 1339.9100 IN. XC YMRP .0000 IN. YC ZMRP 190.7500 IN. ZC SCALE .0300

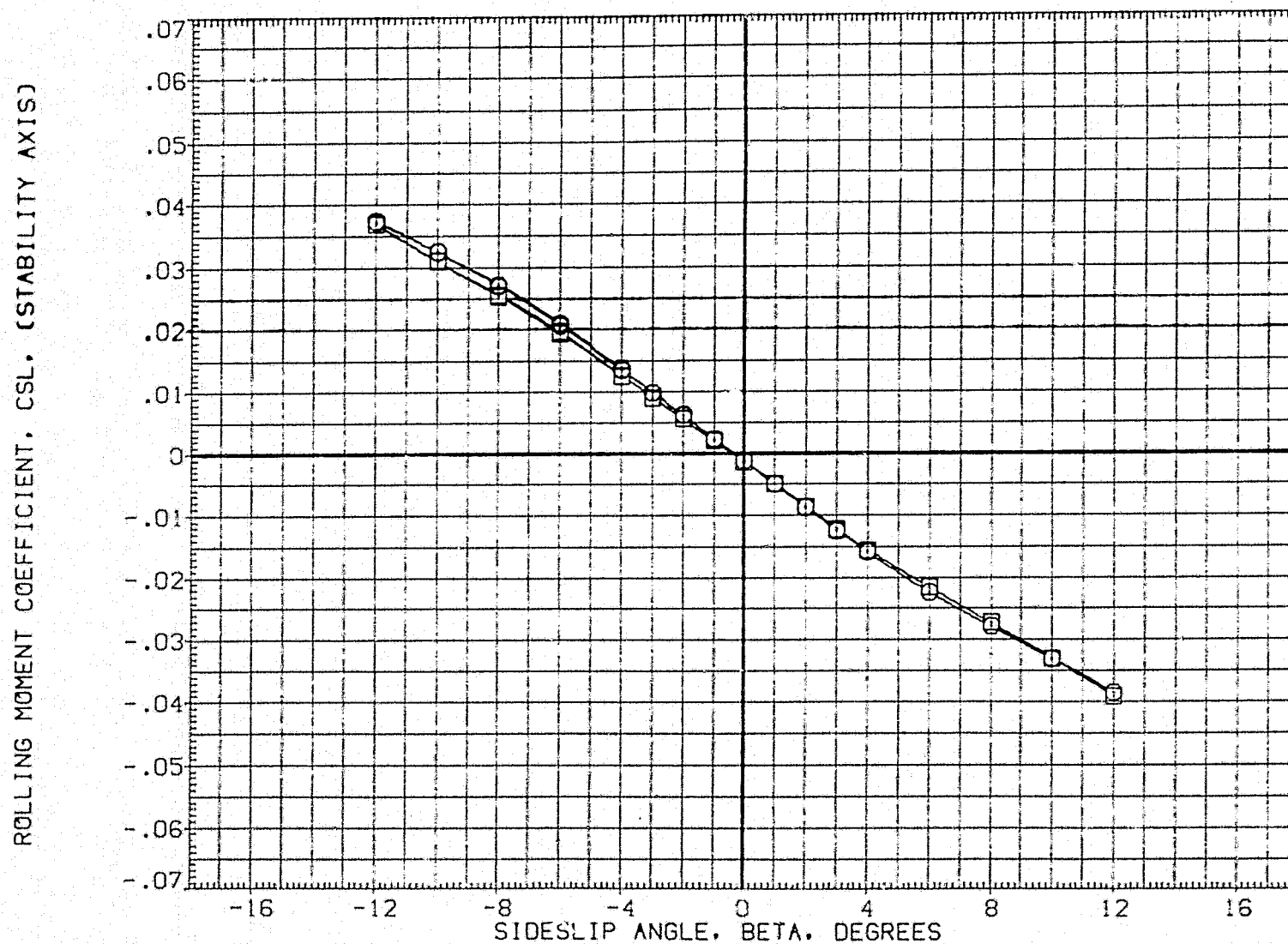


FIG. 255 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH

(B)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	S5-6	10RB	REFERENCE INFORMATION		
(RSM083)	□ CAS K1 F0 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	20.000	7.850	SREF	5500.0000	50.FT.
(RSM093)	□ CAS K1 F0 H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	6.000	1.000	20.000	7.850	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

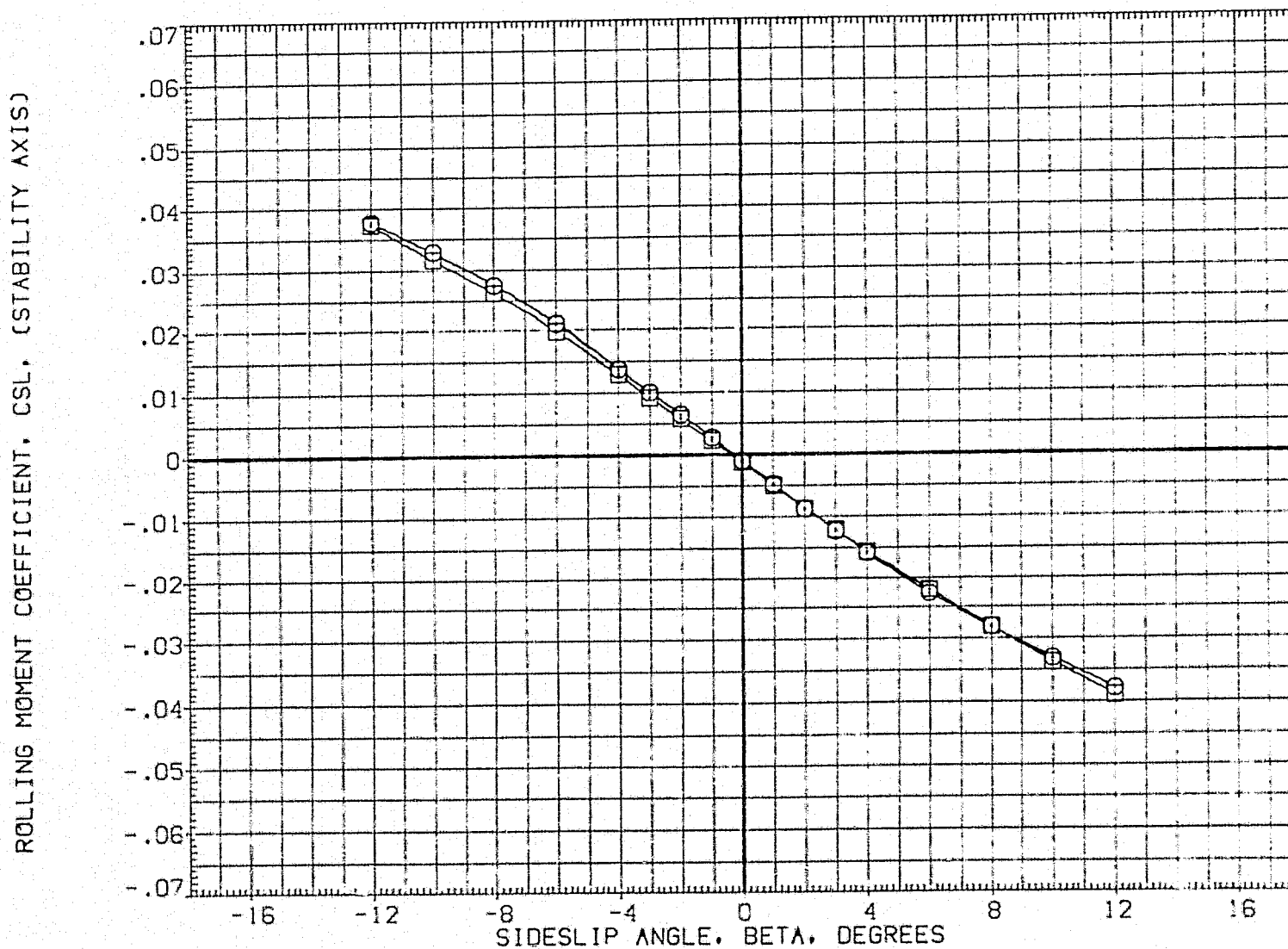


FIG. 255 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH  
(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	IORB	REFERENCE INFORMATION
(RGM083)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	6.000	1.000	20.000	7.850	SPFF 5500.0000 IN. XC
(RGM093)	CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	6.000	1.000	20.000	7.850	LREF 327.8000 IN. XC
						BREF 2348.0000 IN. XC
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. XC
						ZMRP 190.7500 IN. XC
						SCALE .0300

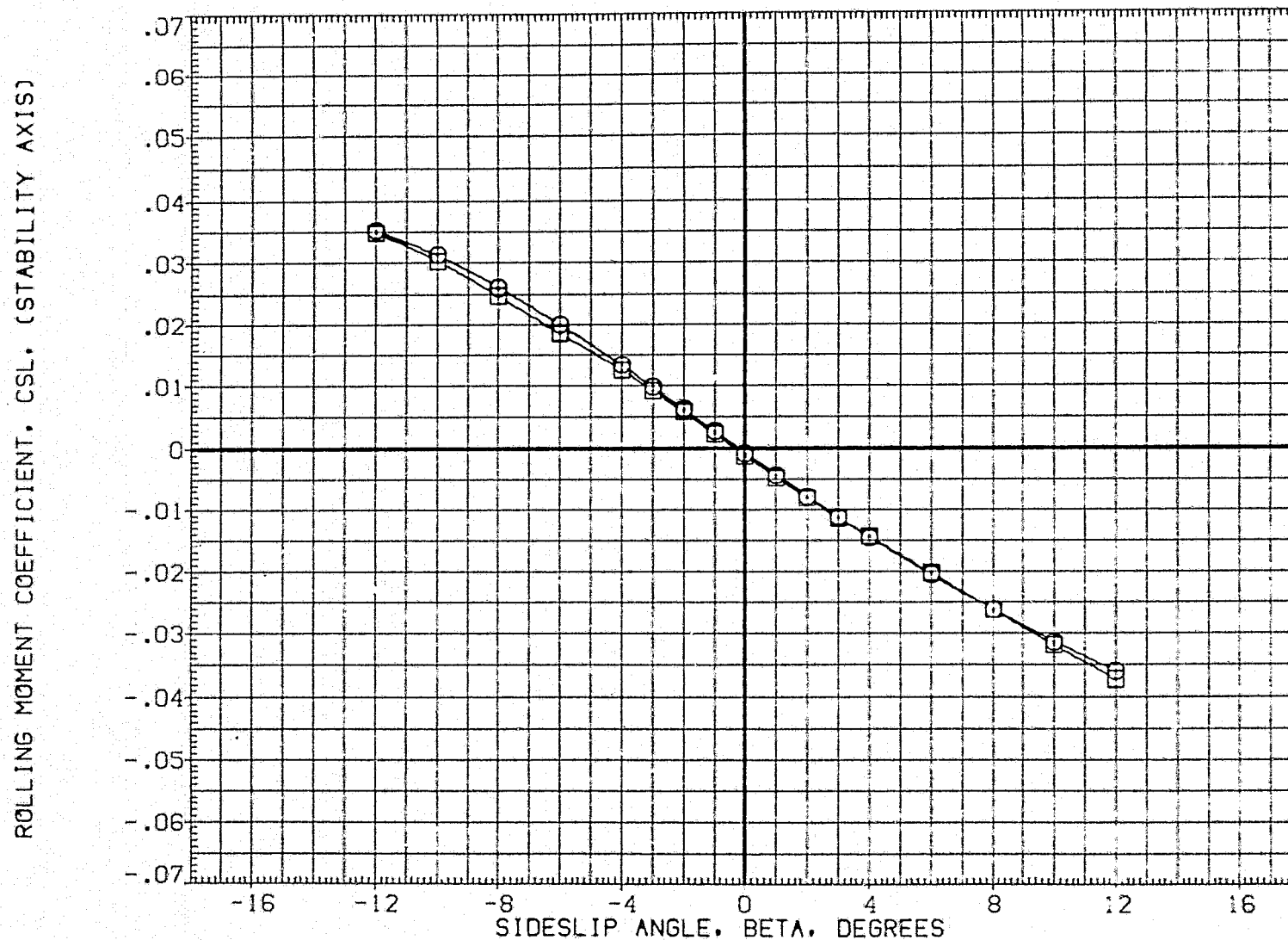


FIG. 255 747+ORB(8 DEG), EFFECT OF TAIL CONE, FLAPS UP LAUNCH  
(D)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RUM093) ☐ CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RUM097) ☐ CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

ALPHA

STAB

SS-6

IORB

REFERENCE INFORMATION

SREF 5500.0000 SC.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. YC  
 YMRP 190.0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

SIDE FORCE COEFFICIENT, CY

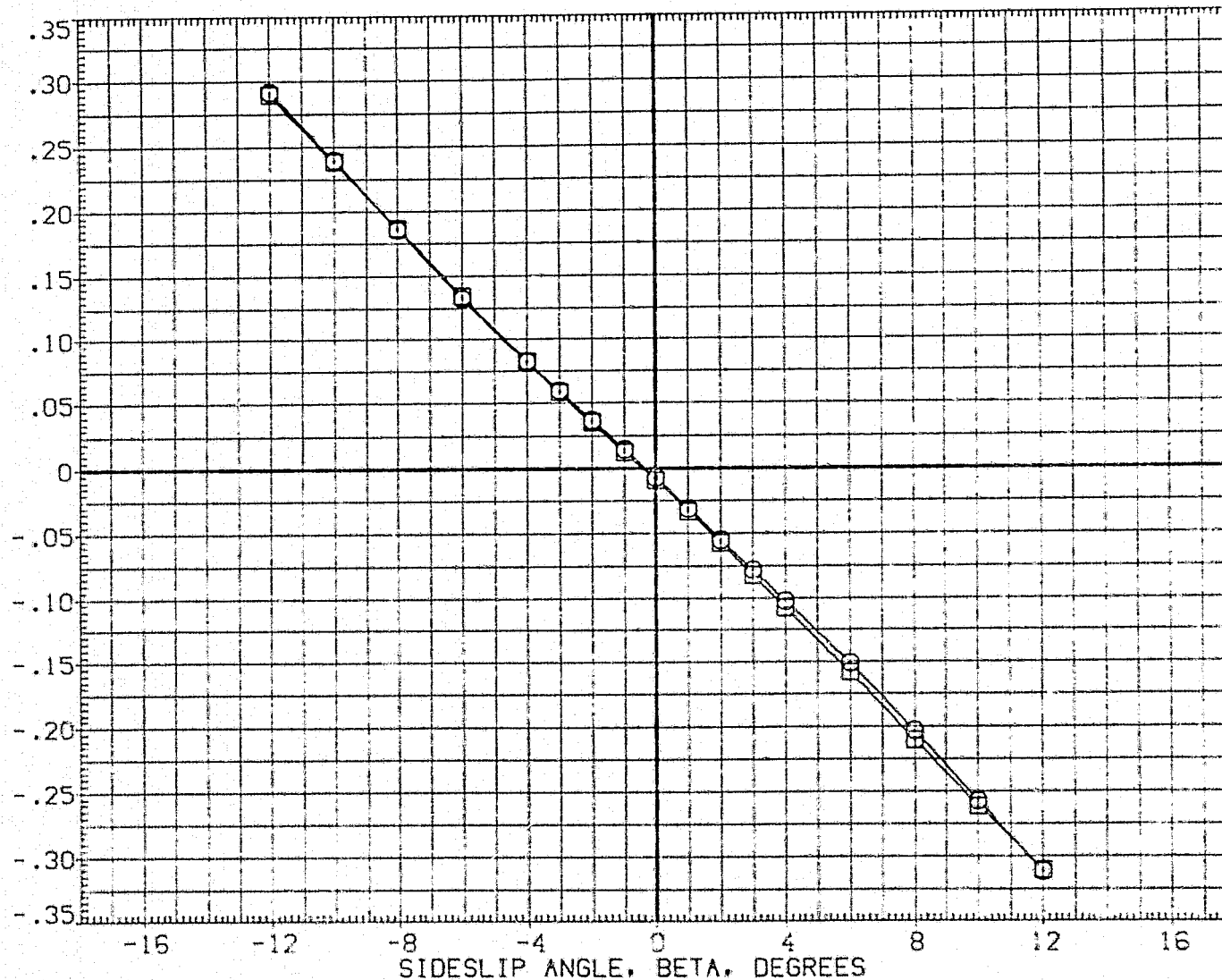


FIG. 256 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAT	S5-6	IORB	REFERENCE INFORMATION
(RGM093)	□ CAS K1 FO HIS.6 V9.1 (PLUS. ORB NOZ AT38.2 )	6.000	1.000	20.000	7.650	SREF 5500.0000 SQ. FT.
(RGM097)	□ CAS K1 FO HIS.6 V9.1 (PLUS. ORB TCS AT38.2 )	6.000	1.000	20.000	9.700	LREF 3510.8000
						BREF 2348.0000
						XMRP 1339.9100
						YMRP 1000.0000
						ZMRP 190.7500
						SCALE 0.000

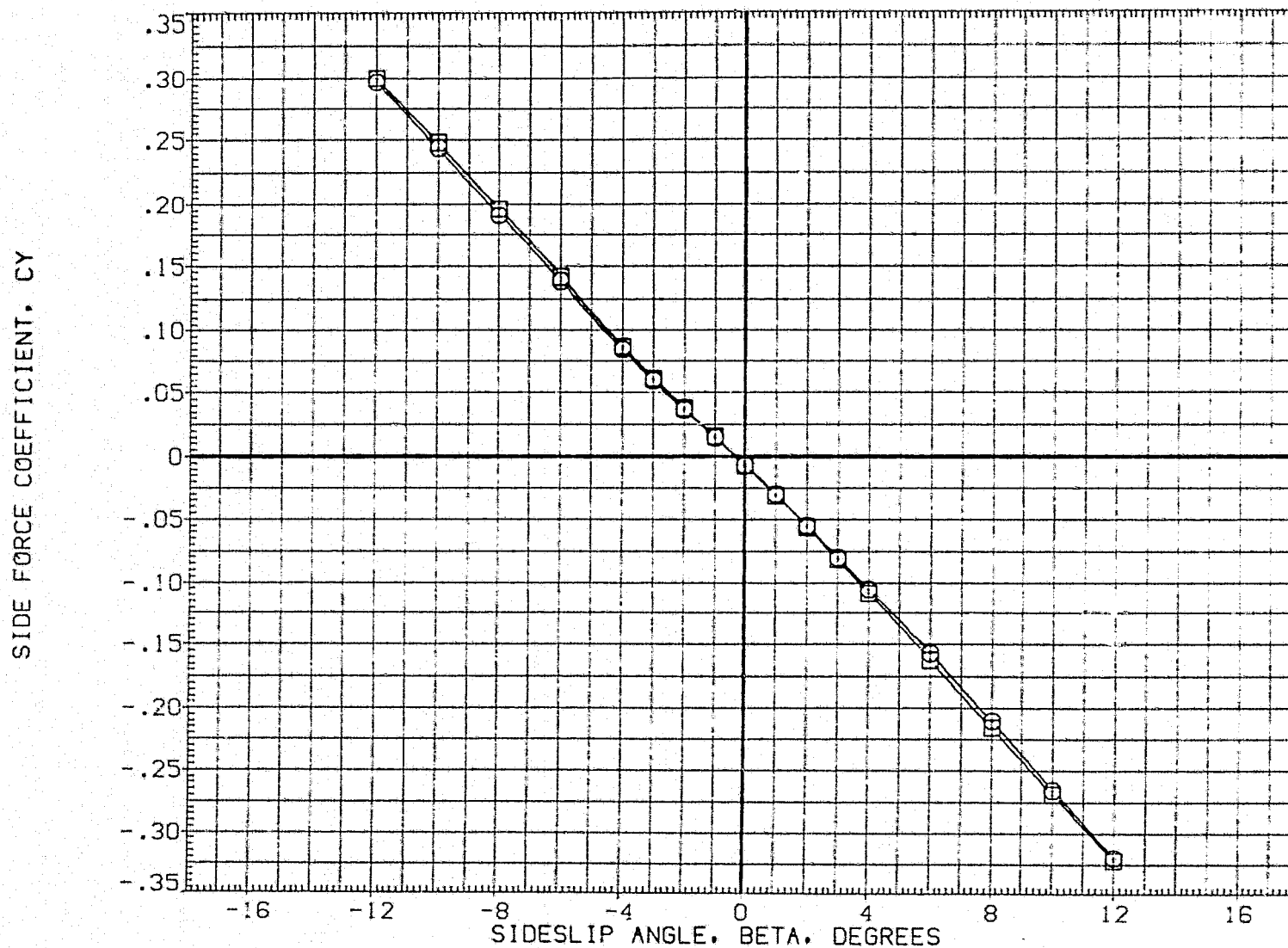


FIG. 256 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH  
(B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM093)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RGM097)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

ALPHA STAB SS-6 TORB  
 6.000 1.000 20.000 7.850  
 6.000 1.000 20.000 9.700

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

SIDE FORCE COEFFICIENT, CY

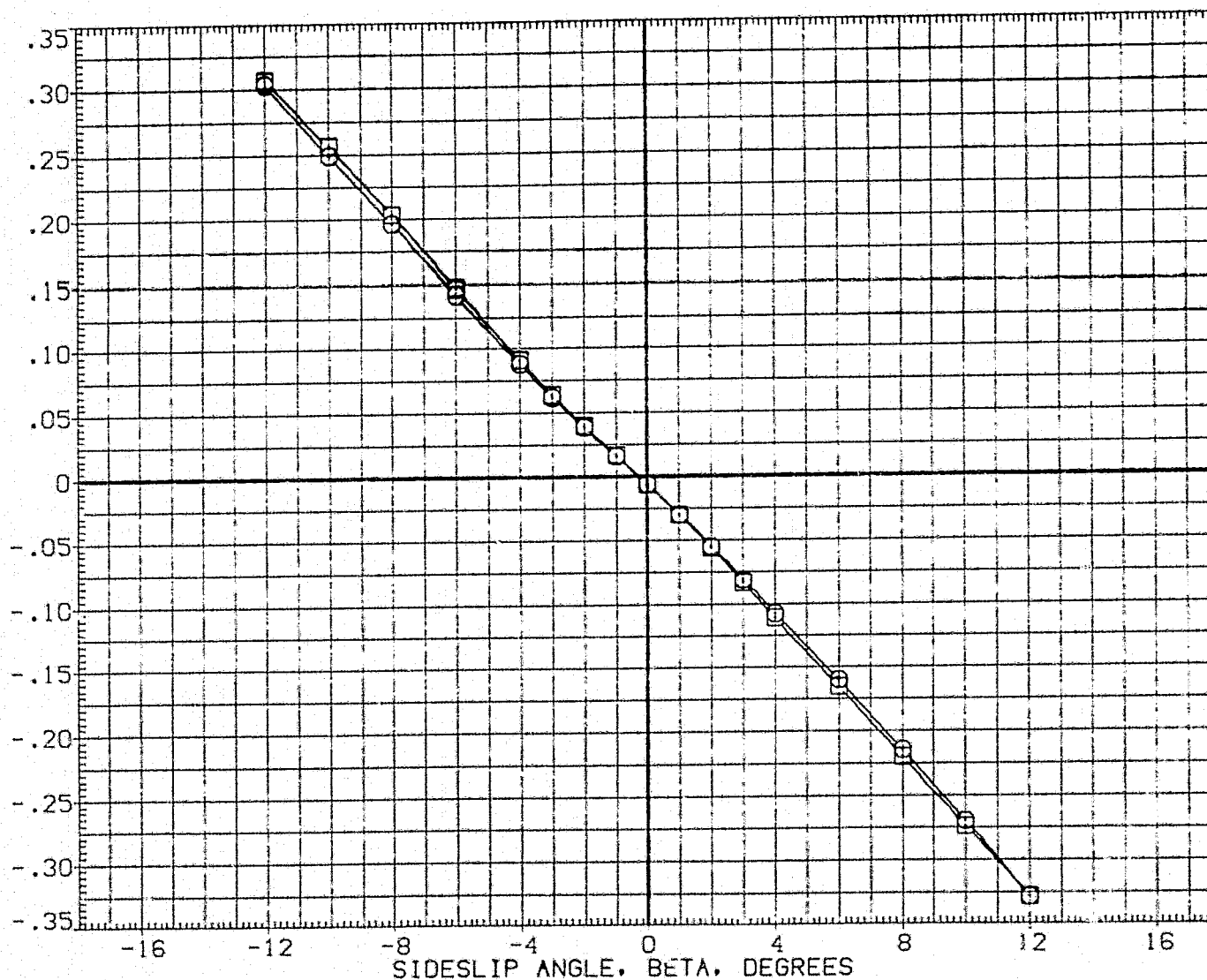


FIG. 256 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH

(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM093)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RGM097)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

ALPHA1

STAB

SS-6

10RB

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

SIDE FORCE COEFFICIENT, CY

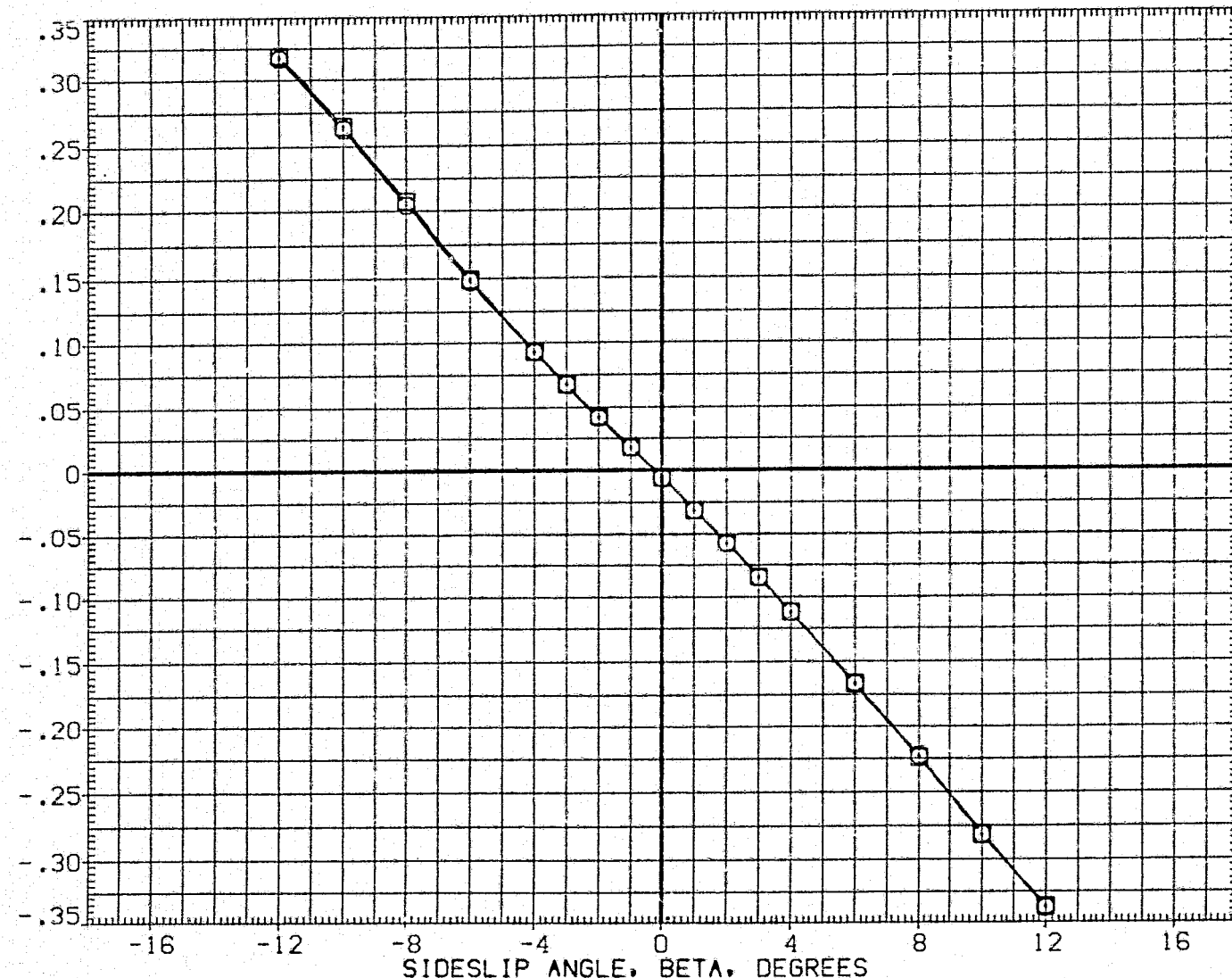


FIG. 256 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION		
(R3M093)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	6.000	1.000	20.000	7.850	SREF	5500.0000	SQ.FT.
(R3M097)	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	6.000	1.000	20.000	9.700	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

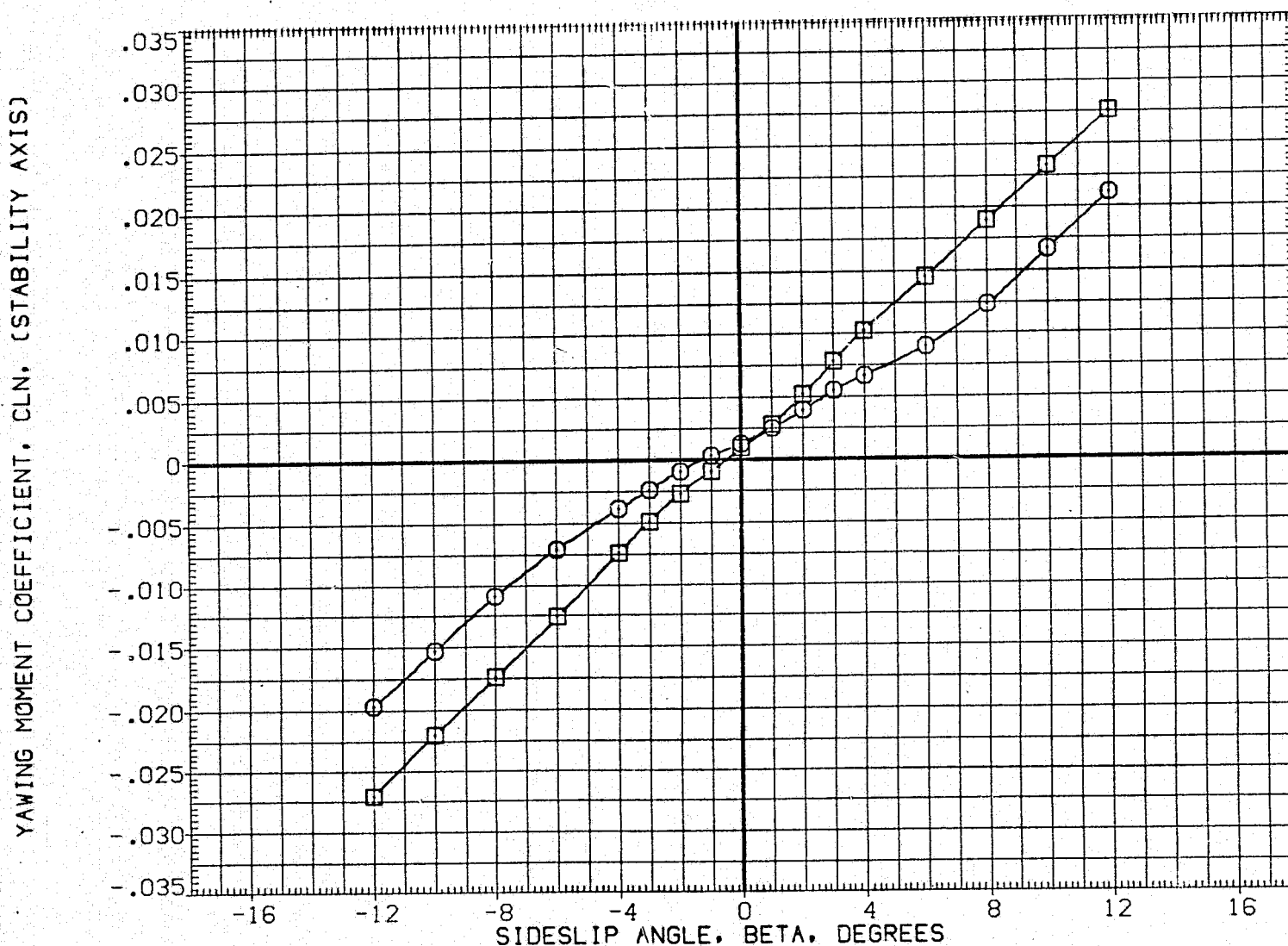


FIG. 256 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM093)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RGM097)  $\square$  CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT39.2 )

ALPHA

STAB

SS-6

10RB

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

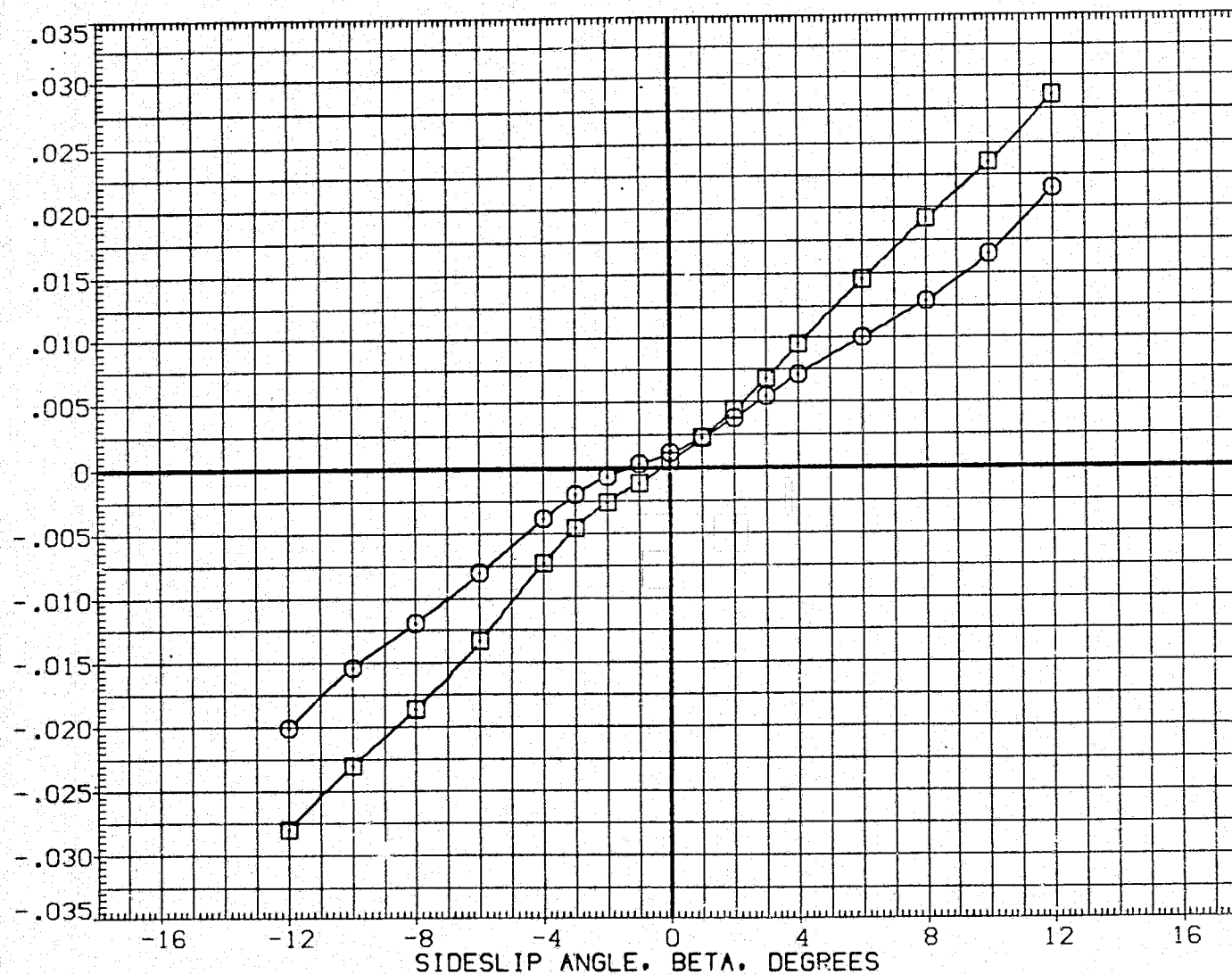


FIG. 256 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH

(B)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGM093)	□ CA5 K1 FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	6.000	1.000	20.000	7.850	SREF	5500.0000	SQ.FT.
(RGM097)	□ CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	20.000	9.700	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						YMRP	1339.9100	IN. XC
						ZMRP	190.7500	IN. YC
						SCALE	.0300	IN. ZC

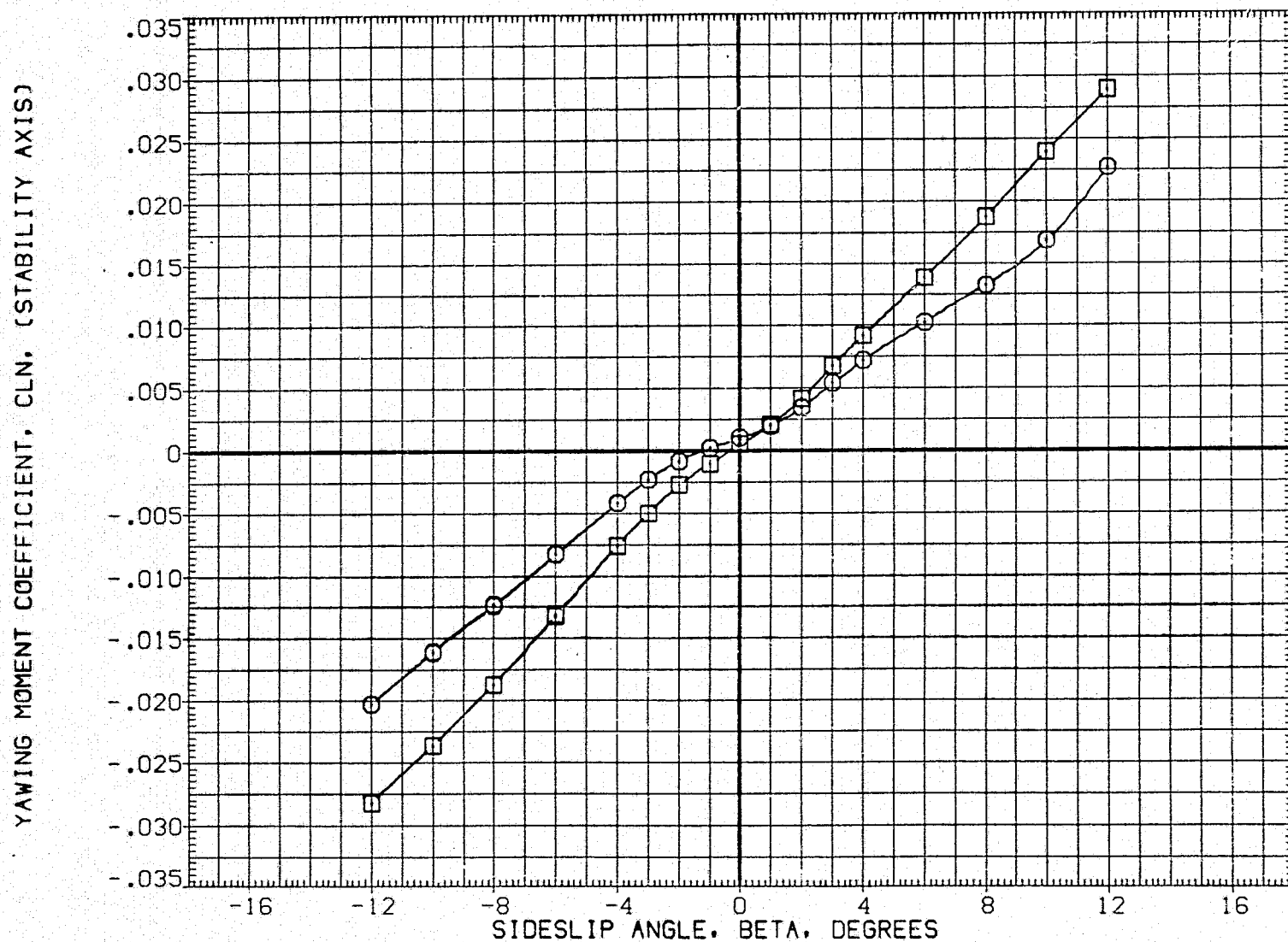


FIG. 256 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH

(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STA8	SS-6	10RB	REFERENCE INFORMATION	
(RGM093) ○	CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	6.000	1.000	20.000	7.850	SREF	5500.0000 SQ.FT.
(RGM097) □	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	6.000	1.000	20.000	9.700	LREF	327.8000 IN.
						BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

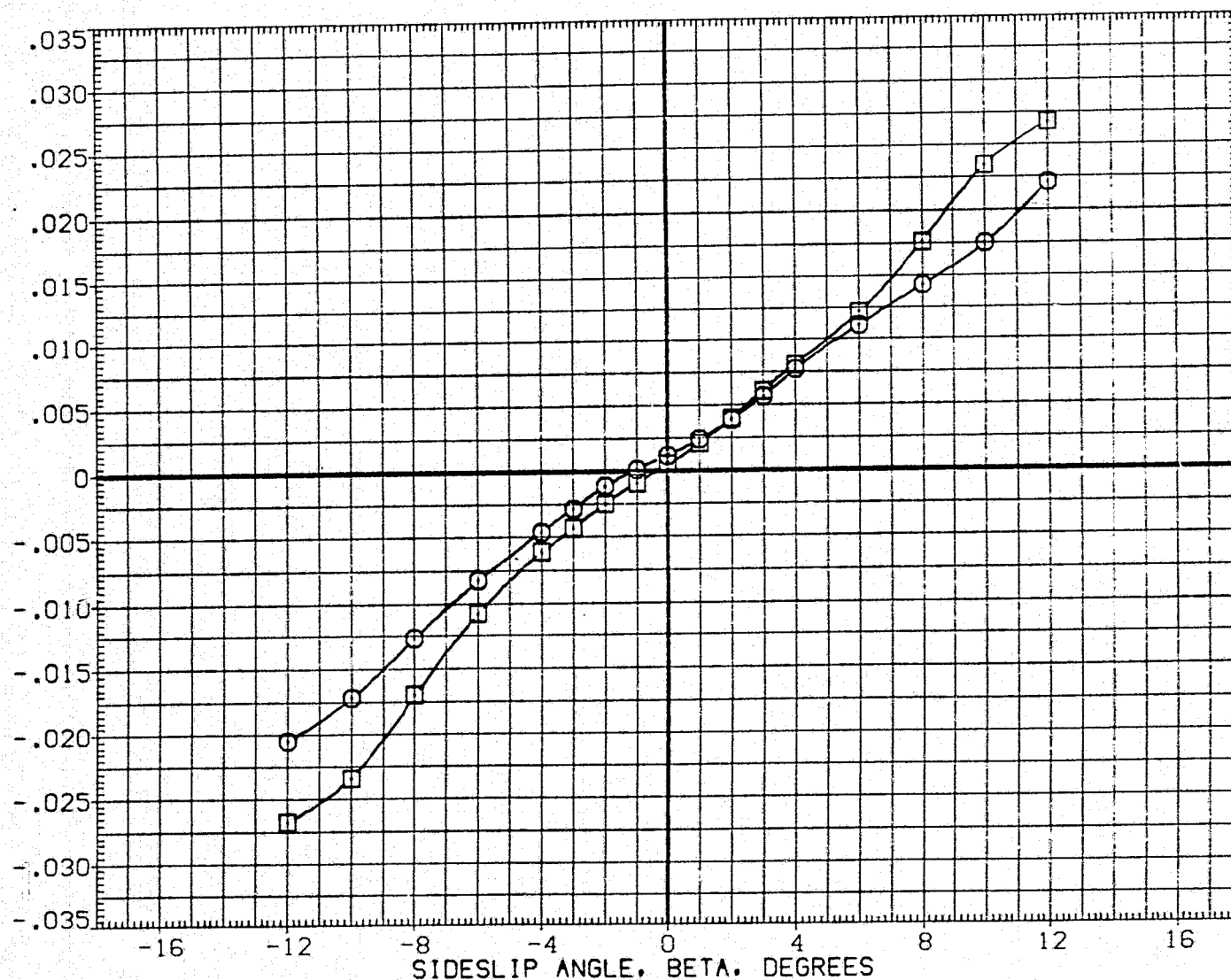


FIG. 256 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	10RB	REFERENCE INFORMATION
(RGM093)	CA5 K1 F0 H15.6 V9.1 (PLUS. ORB NOZ AT38.2)	6.000	1.000	20.000	7.850	SREF 5500.0000 SQ.FT.
(RGM097)	CA5 K1 F0 H15.6 V9.1 (PLUS. ORB TCS AT38.2)	6.000	1.000	20.000	9.700	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

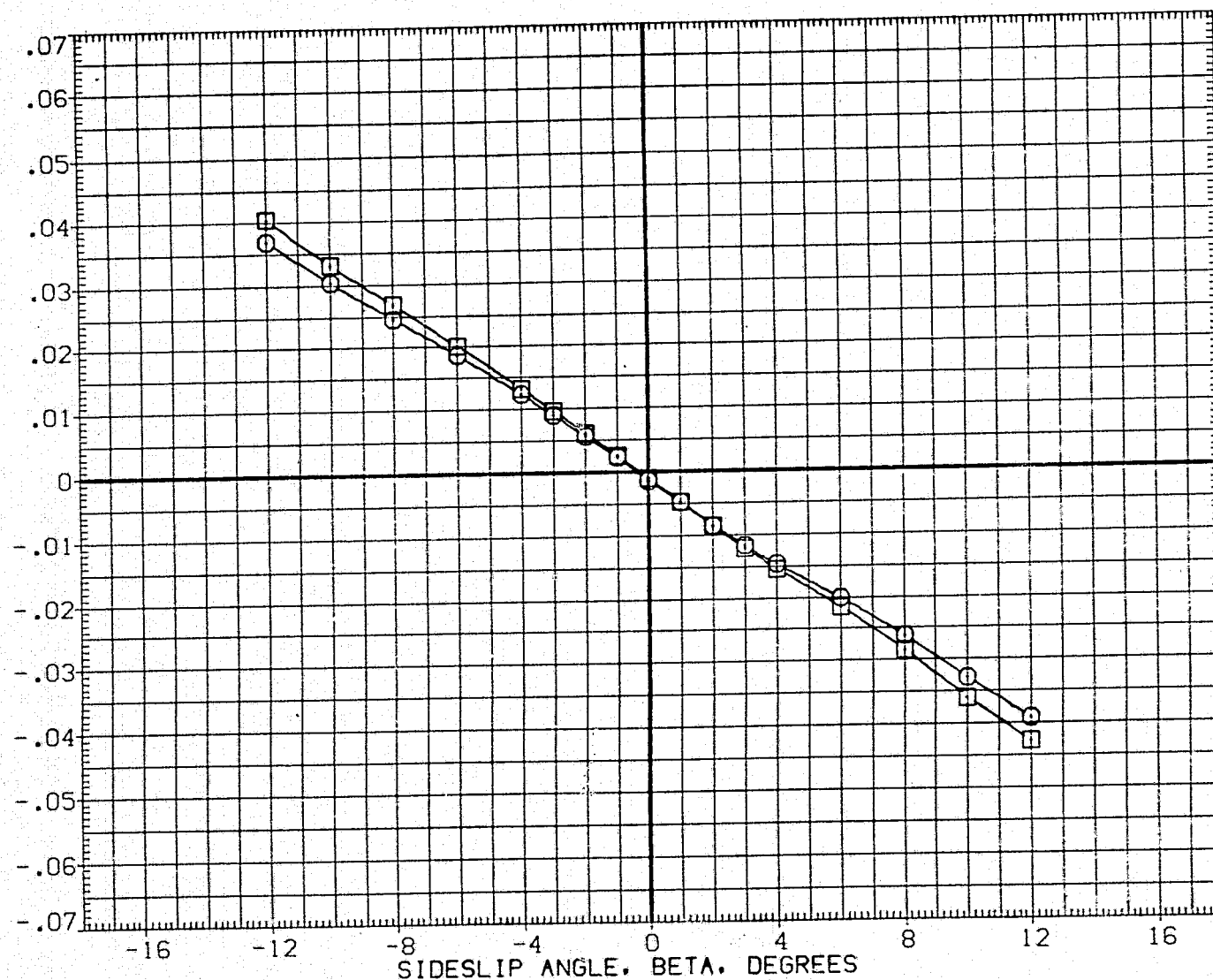


FIG. 256 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH  
(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RIM093)	CA5 KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )	6.000	1.000	20.000	7.850	SREF	5500.0000	SQ.FT.
(RGM097)	CA5 KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	20.000	9.700	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

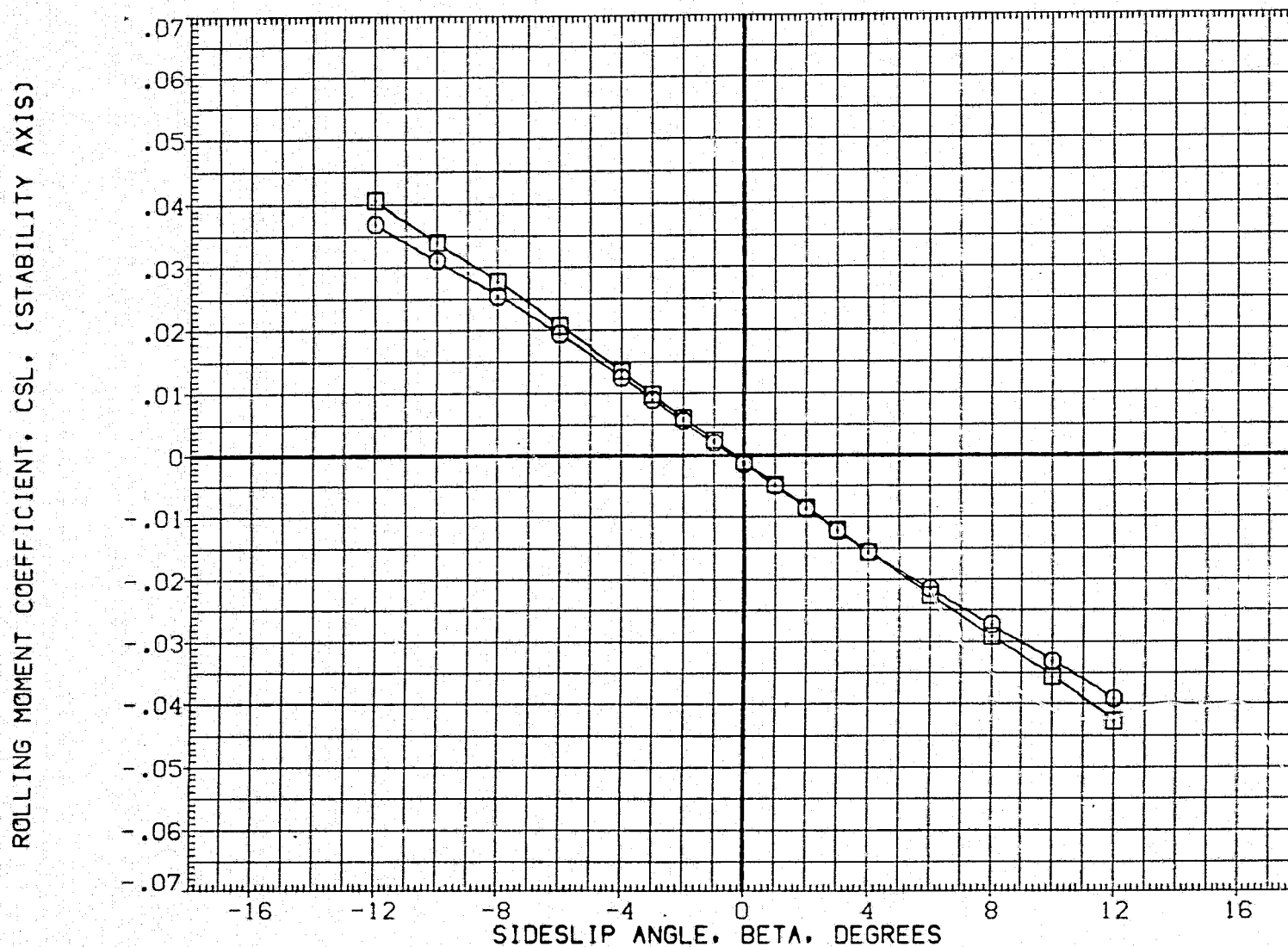


FIG. 256 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH  
(B)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RJM093)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RGM097)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

ALPHA1 STAB S5-6 10RB  
 6.000 1.000 20.000 7.850  
 6.000 1.000 20.000 9.700

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

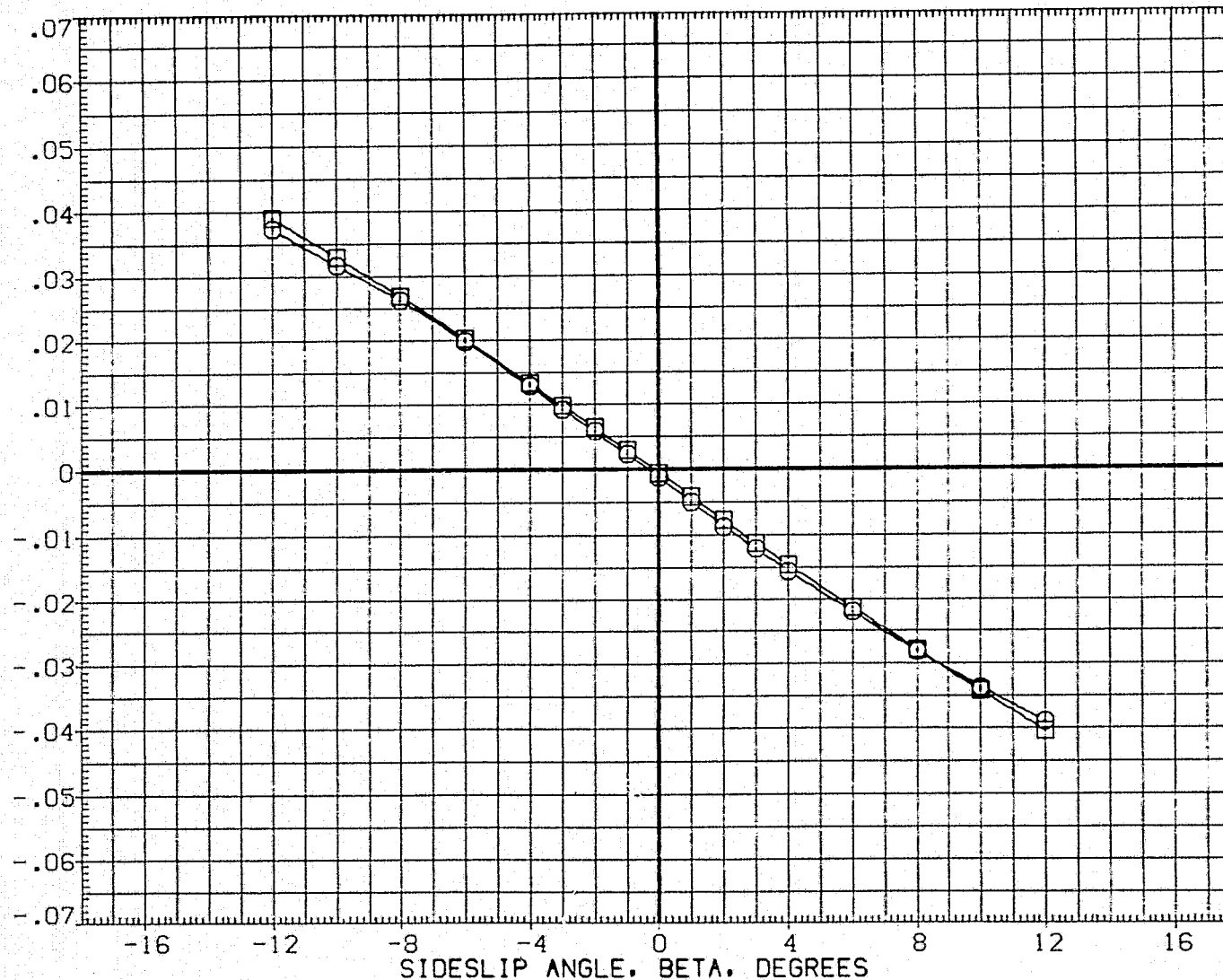


FIG. 256 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH  
 (C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RUM093) ☐ CAS KI FO H15.6 V9.1 (PLUS. ORB NOZ AT38.2 )  
 (RUM097) ☐ CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

ALPHA

STAB

S5-6

IORB

REFERENCE INFORMATION

SREF 5500.0000 SG.F.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9103 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

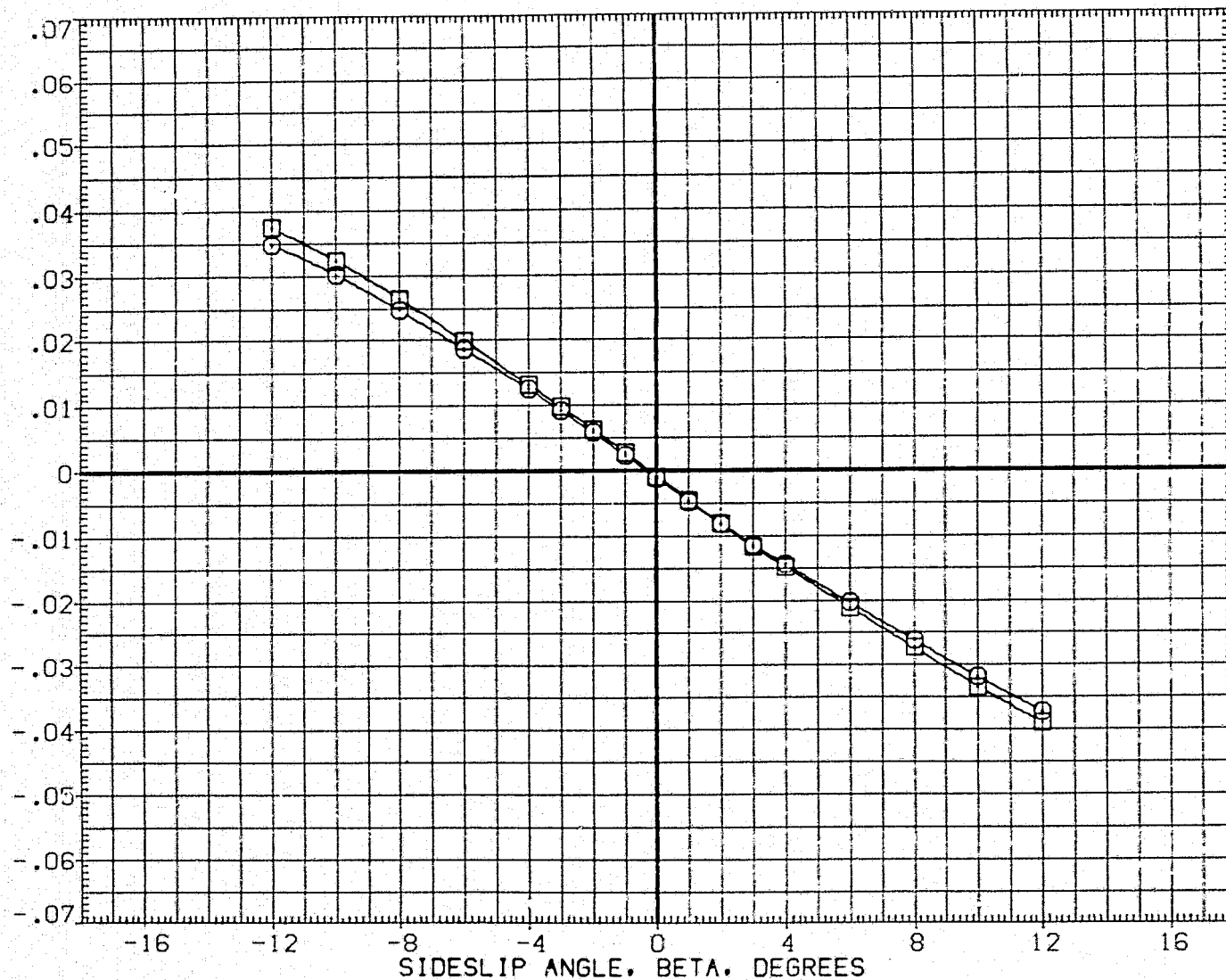


FIG. 256 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP LAUNCH

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RGM067)	○ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)
(RGM079)	□ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.2)

ALPHA1	STAB	S5-6	10RB	REFERENCE INFORMATION
6.000	1.000	45.000	9.700	SREF 5500.0000 SQ.FT.
6.000	1.000	45.000	7.850	LREF 327.8000 IN.
				BREF 2348.0000 IN.
				YMRP 1339.9100 IN. XC
				ZMRP .0000 IN. YC
				ZMRP 190.7500 IN. ZC
				SCALE .0300

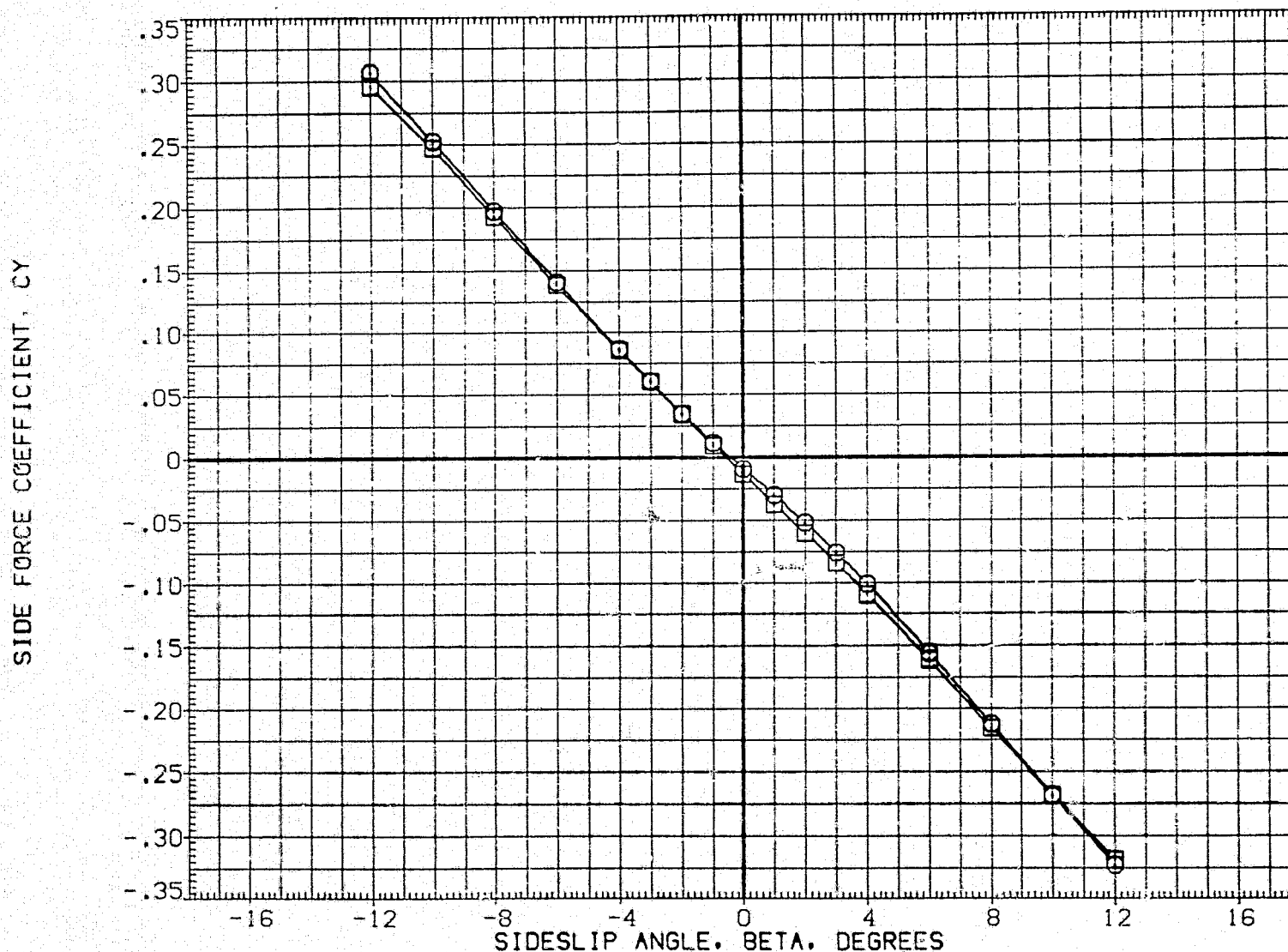




FIG. 257 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH

(A)MACH = .50

## DA-A SET SYMBOL CONFIGURATION DESCRIPTION

(RGM067)  CA5 KI F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )  
 (RGM079)  CA5 KI F20 H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

ALPHA1	STAB	SS-G	10RB	REFERENCE INFORMATION		
6.000	1.000	45.000	9.700	SREF	5500.0000	50. FT.
6.000	1.000	45.000	7.850	LREF	327.8000	IN.
				BREF	2348.0000	IN.
				XMRP	1339.9100	IN. XC
				YMRP	.0000	IN. YC
				ZMRP	190.7500	IN. ZC
				SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

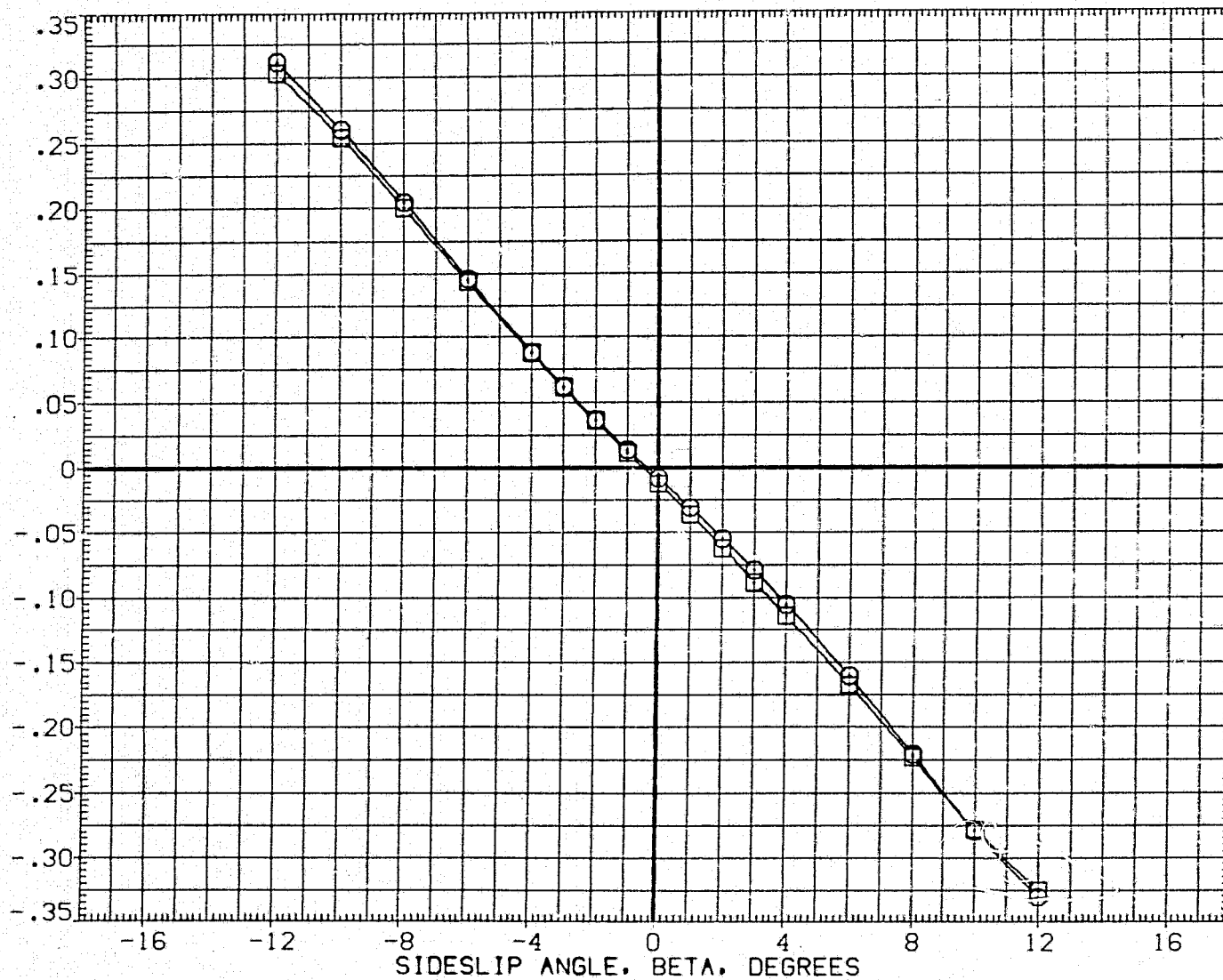


FIG. 257 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH

(B)MACH = .60

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGM067)	□ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	6.000	1.000	45.000	9.700	SREF	5500.0000	SQ. FT.
(RGM079)	□ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	45.000	7.850	LREF	3.7.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

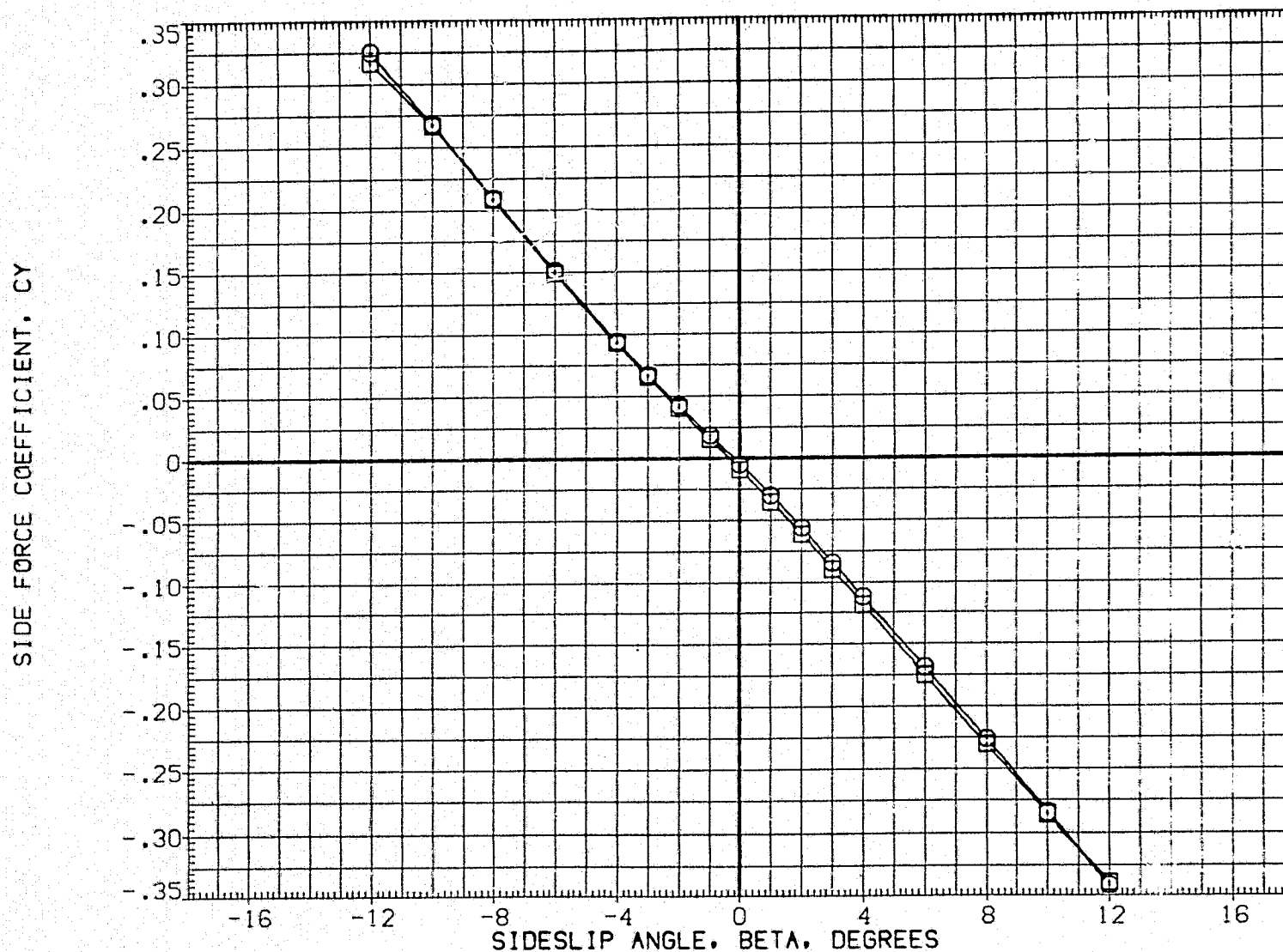


FIG. 257 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH

(C)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM067)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT39.1 )  
 (RGM079)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT39.2 )

ALPHA1  
6.000STAB  
1.000SS-6  
45.000IORB  
9.700  
7.850

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

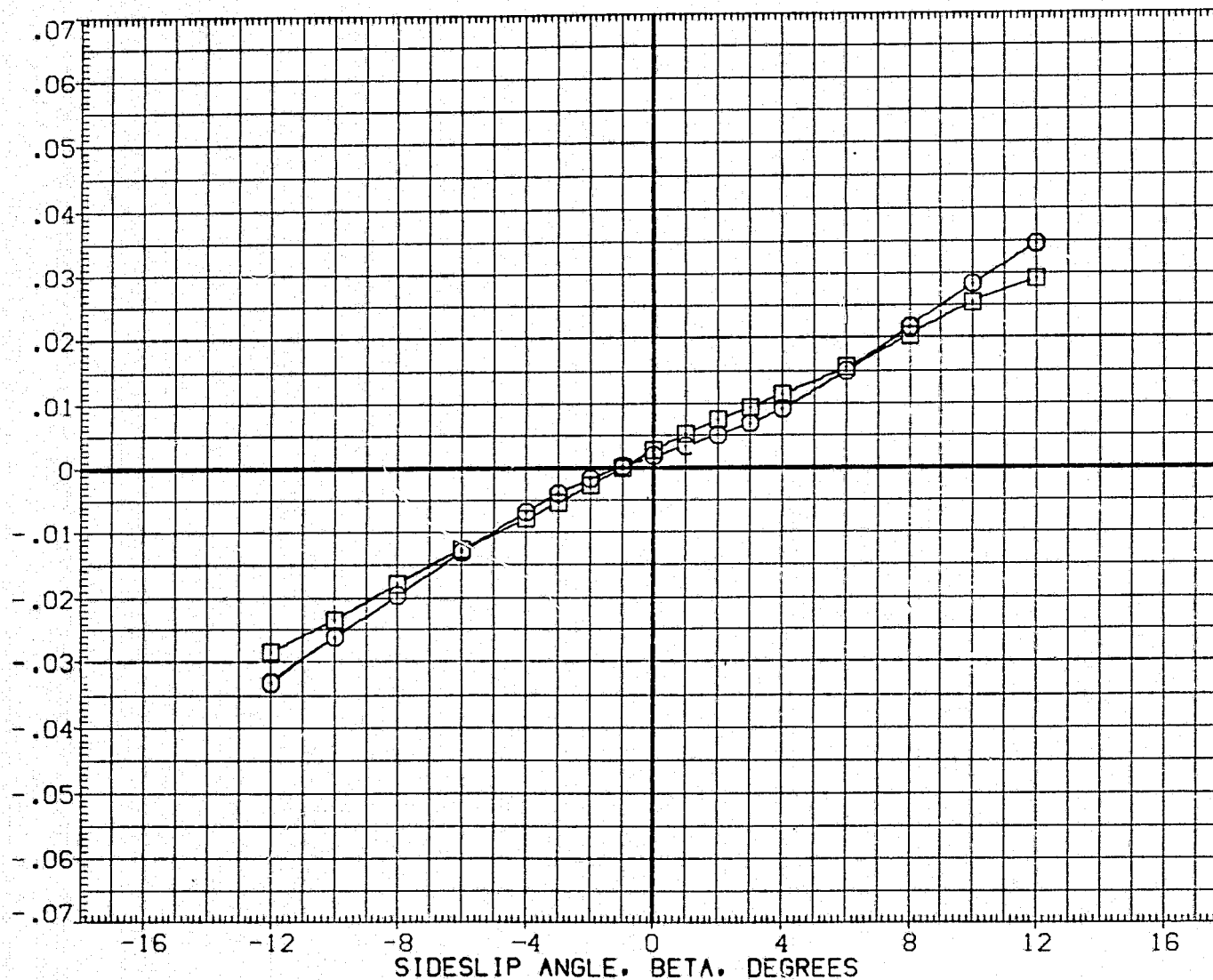


FIG. 257 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH

(A)MACH = .50

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM067)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )  
 (RGM079)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

ALPHA1 STAB S5-6 TORB  
 6.000 1.000 45.000 9.700  
 6.000 1.000 45.000 7.850

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

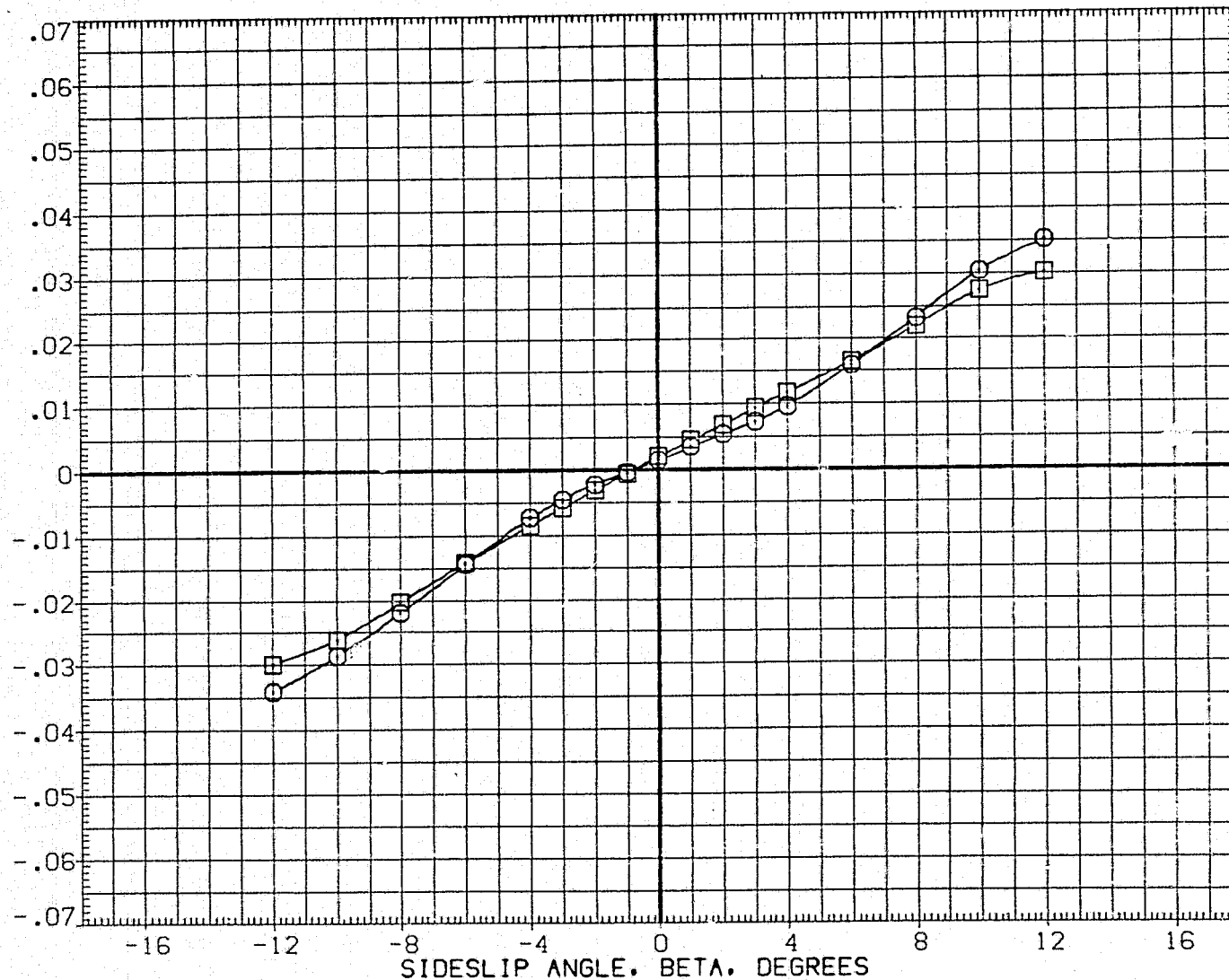


FIG. 257 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM067)  $\square$  CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM079)  $\square$  CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

ALPHA I

STAB

SS-6

IORB

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

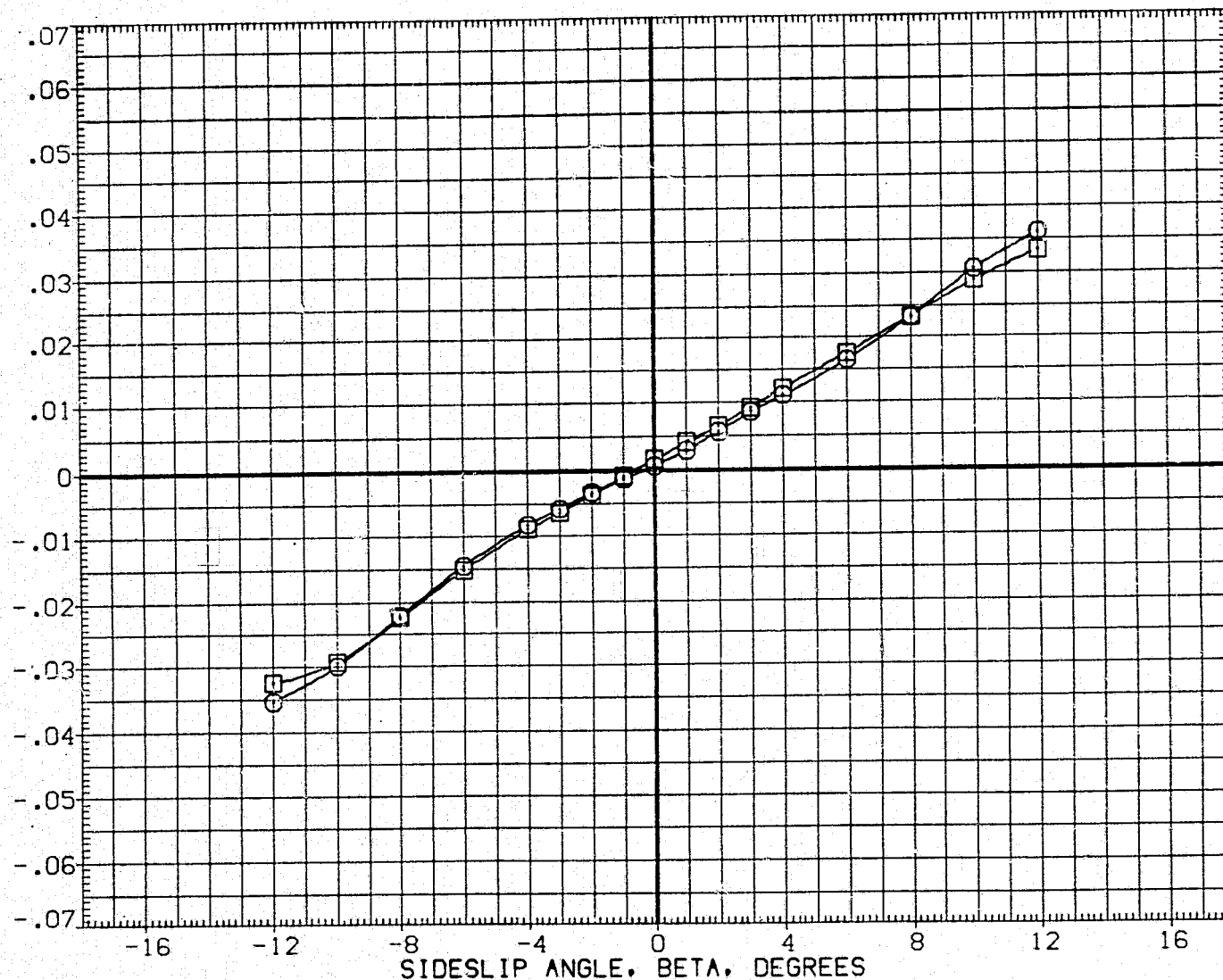


FIG. 257 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH  
 (C)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM067)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM079)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

ALPHA1

STAB

S5-6

IORB

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

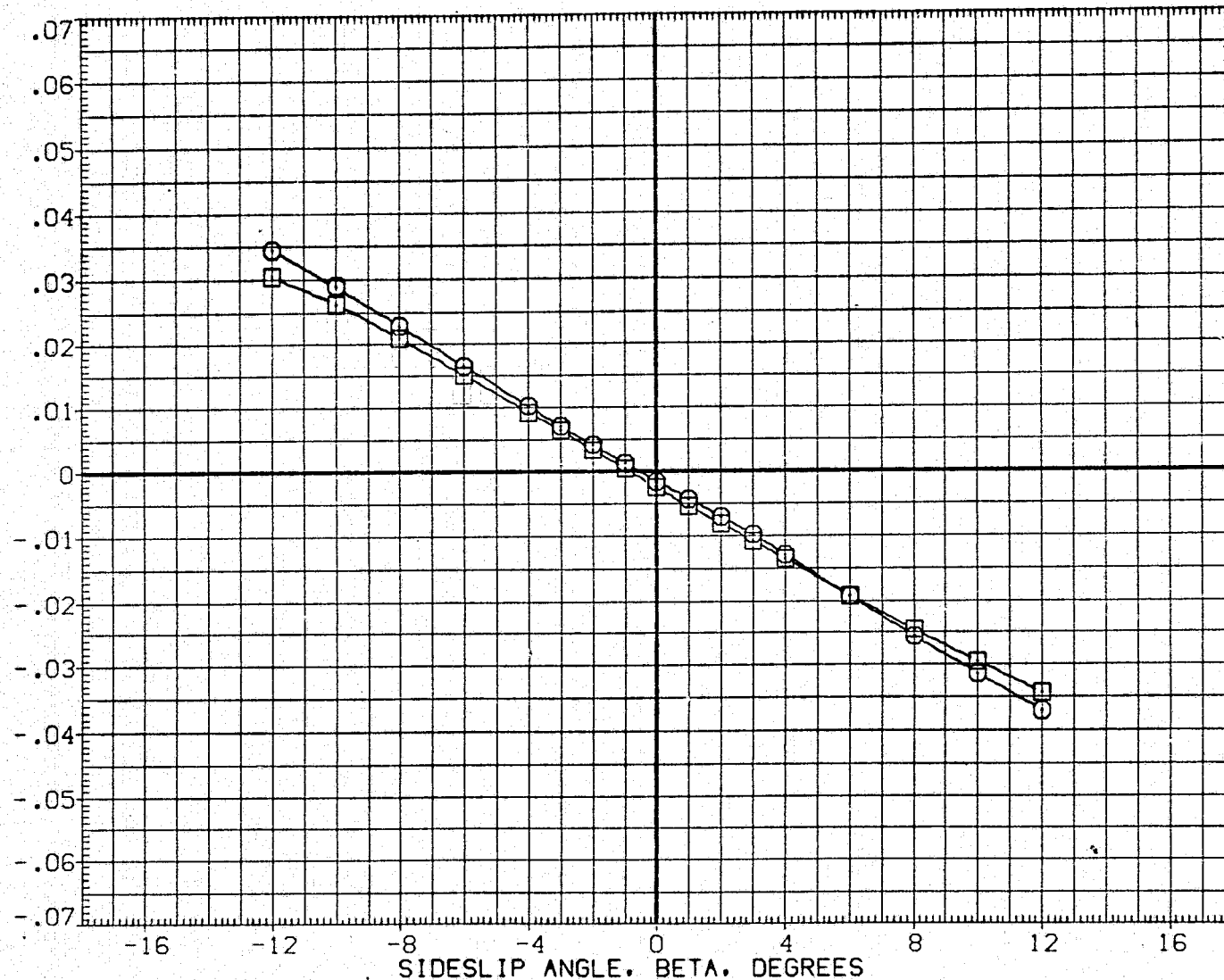


FIG. 257 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM067)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM079)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

ALPHA1

STAB

S5-6

10RB

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

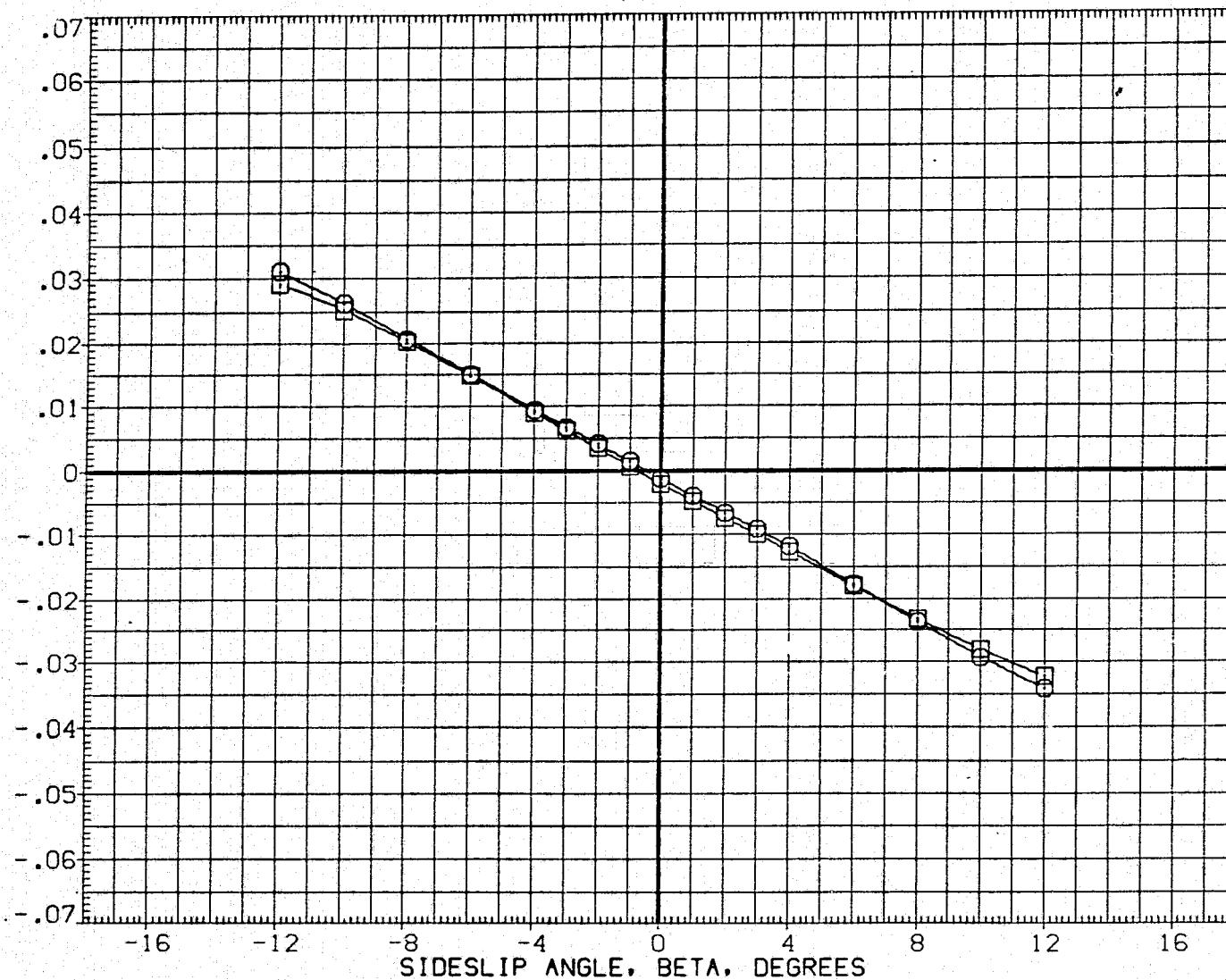


FIG. 257 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH

(B)MACH = .60

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION
(RUM067)	CA5 KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	6.000	1.000	45.000	9.700	SREF 5500.0000 SQ.FT.
(RGM079)	CA5 KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	6.000	1.000	45.000	7.850	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL (STABILITY AXIS)

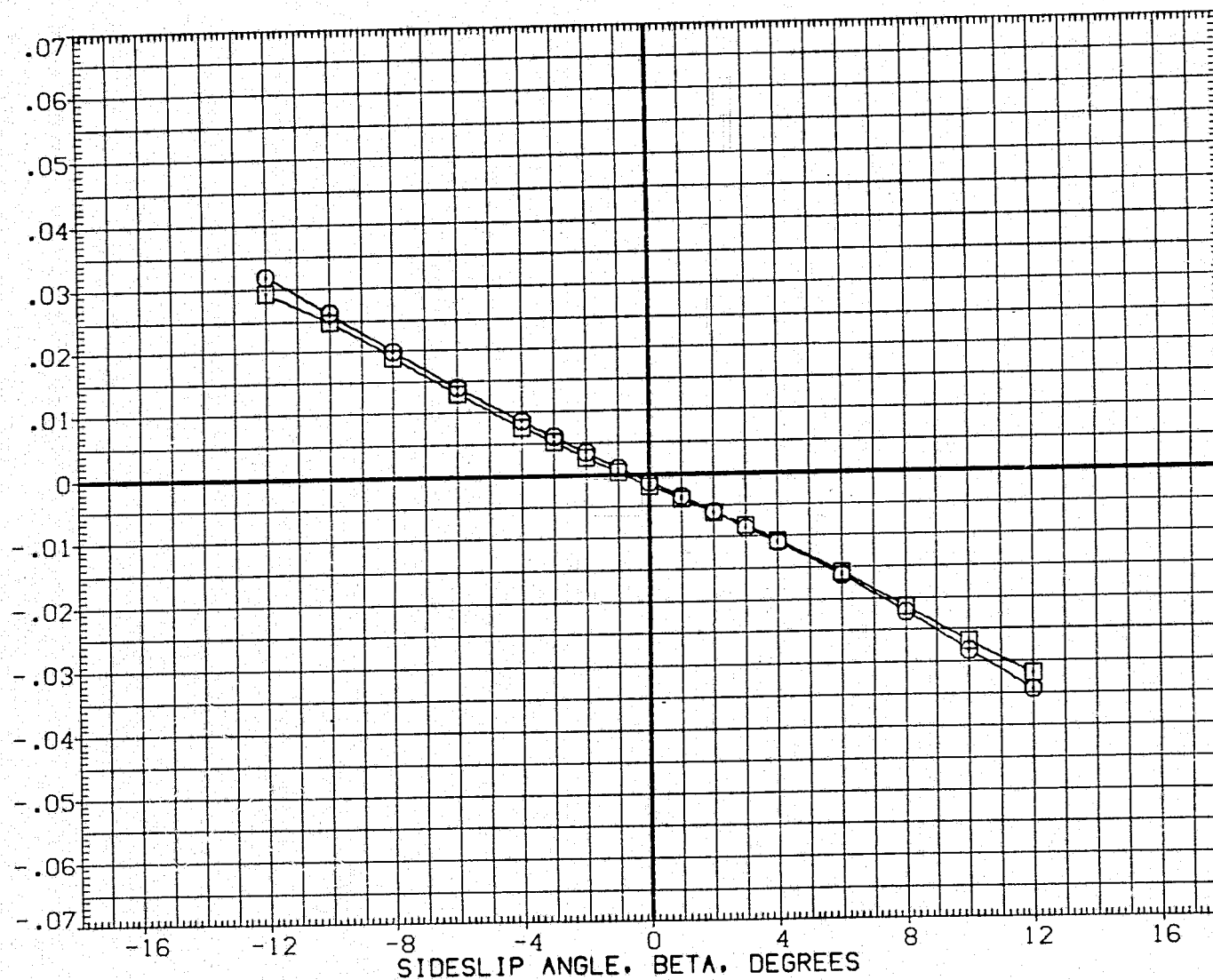


FIG. 257 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS 20 LAUNCH  
(C)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM118)  $\square$  CA5 K1 FD H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM089)  $\square$  CA5 K1 FD H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

ALPHA1 STAB S5-6 10RB  
 6.000 -2.000 .000 4.000  
 6.000 1.000 .000 7.850

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

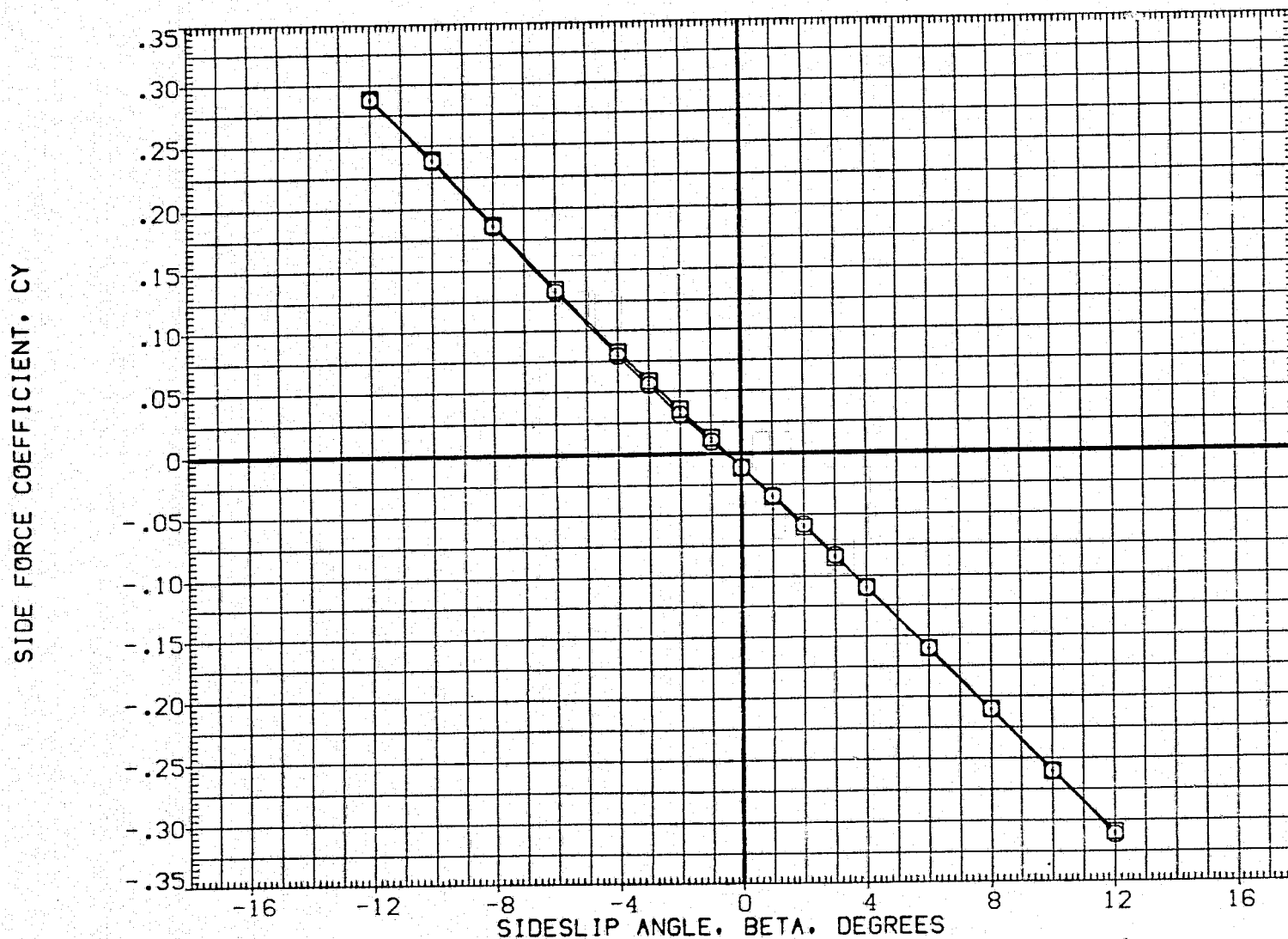


FIG. 258 747+0RB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY  
 (A)MACH = .30



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM118)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM089)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

ALPHA1

STAB

SS-6

IORB

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

SIDE FORCE COEFFICIENT, CY

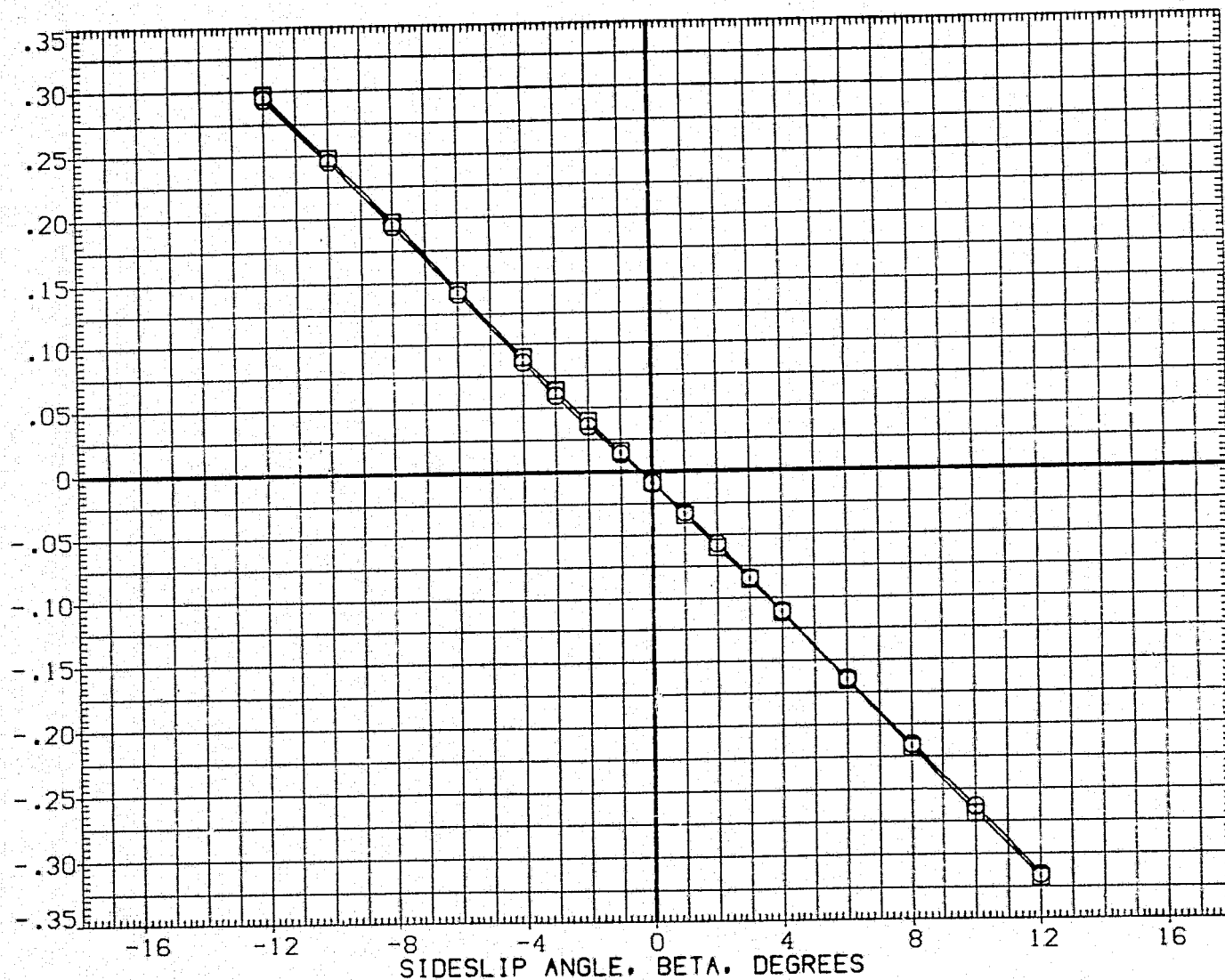


FIG. 258 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	ORB	REFERENCE INFORMATION
(RGM118)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.3)	6.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT.
(RGM089)	CAS KI FO H15.6 V9.1 (PLUS. ORB TCS AT38.2)	6.000	1.000	.000	7.850	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

SIDE FORCE COEFFICIENT, CY

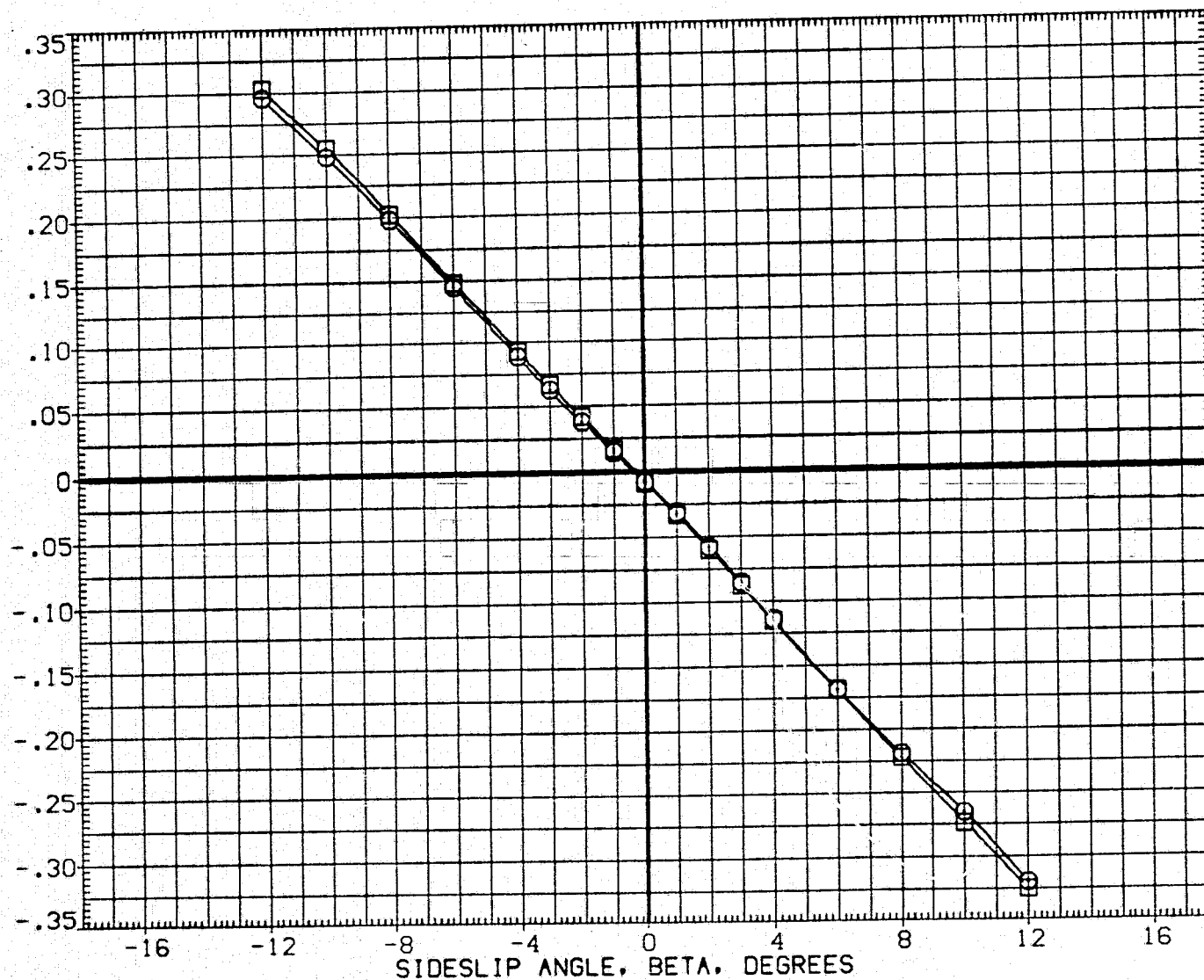


FIG. 258 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY  
(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION
(RGM118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF 5500.0000 SQ.FT.
(RGM089)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	.000	7.850	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

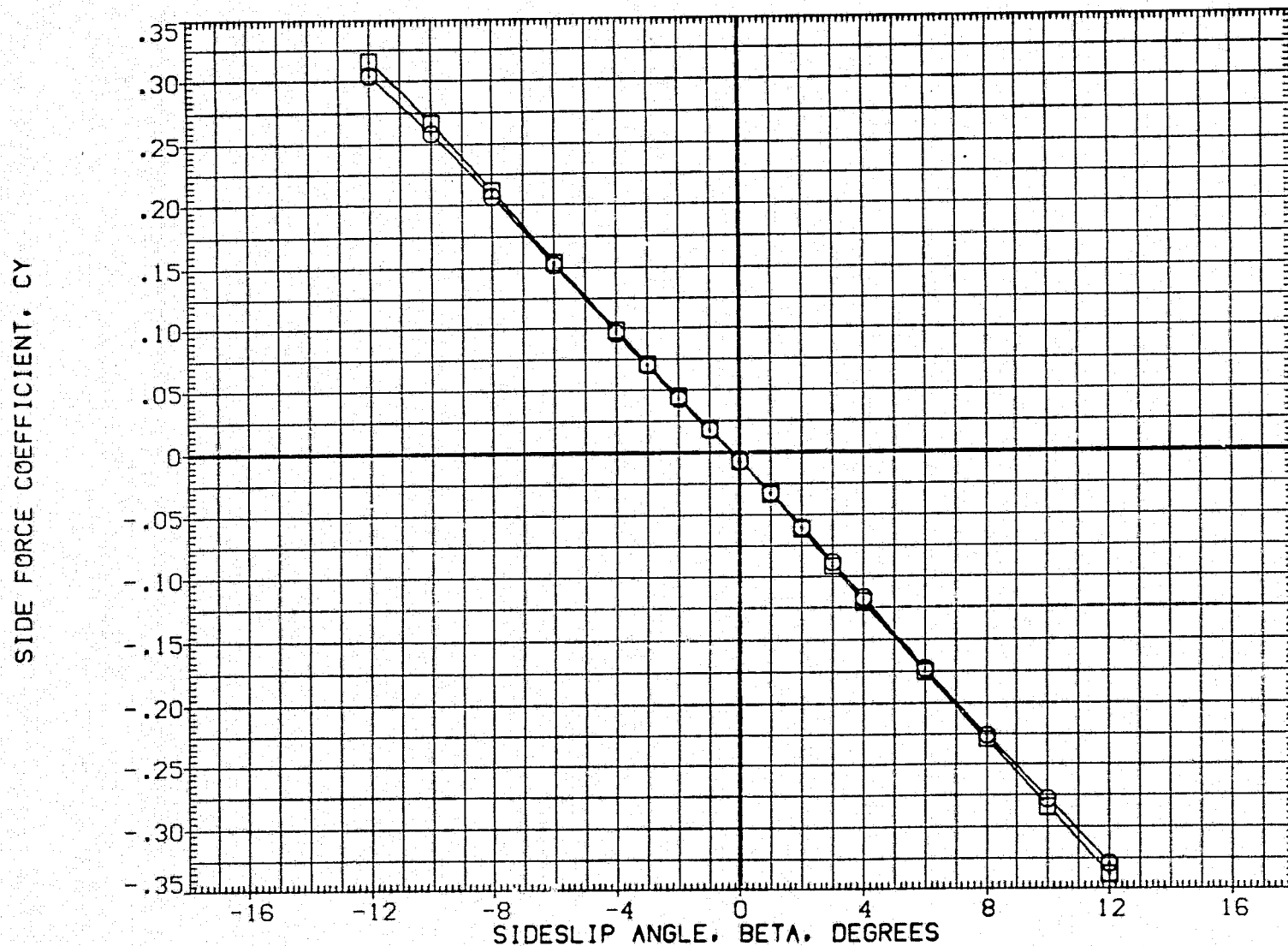


FIG. 258 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY

(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	SS-6	10RB	REFERENCE INFORMATION	
(RGM118) ○	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3)	6.000	-2.000	.000	4.000	SREF	5500.0000 SQ. FT.
(RGM089) □	CA5 K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2)	6.000	1.000	.000	7.850	LREF	327.8000 IN.
						BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

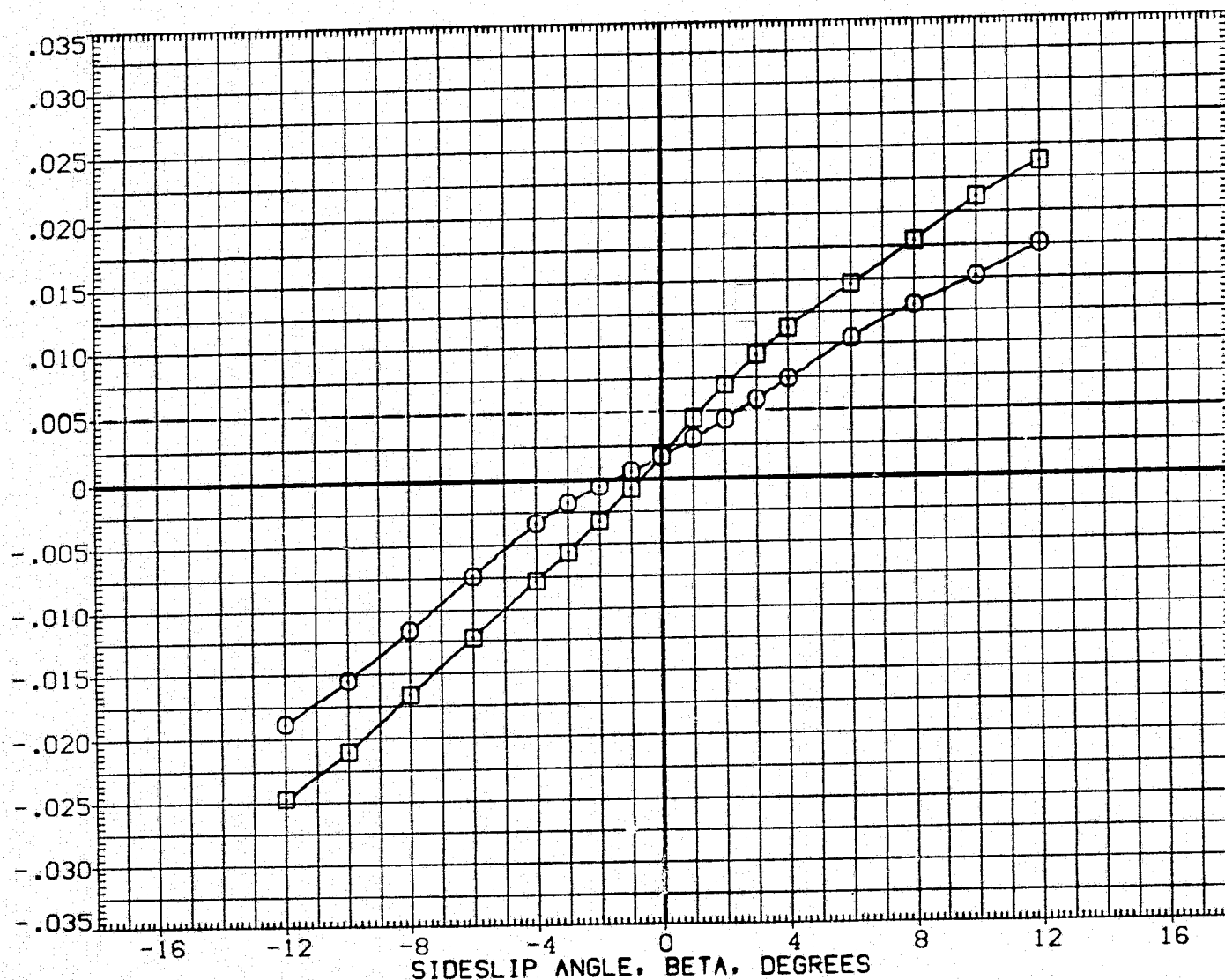


FIG. 258 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY  
(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM118)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )  
 (RGM089)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )

ALPHA1 STAB SS-6 IORB  
 6.000 -2.000 .000 4.000  
 6.000 1.000 .000 7.850

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

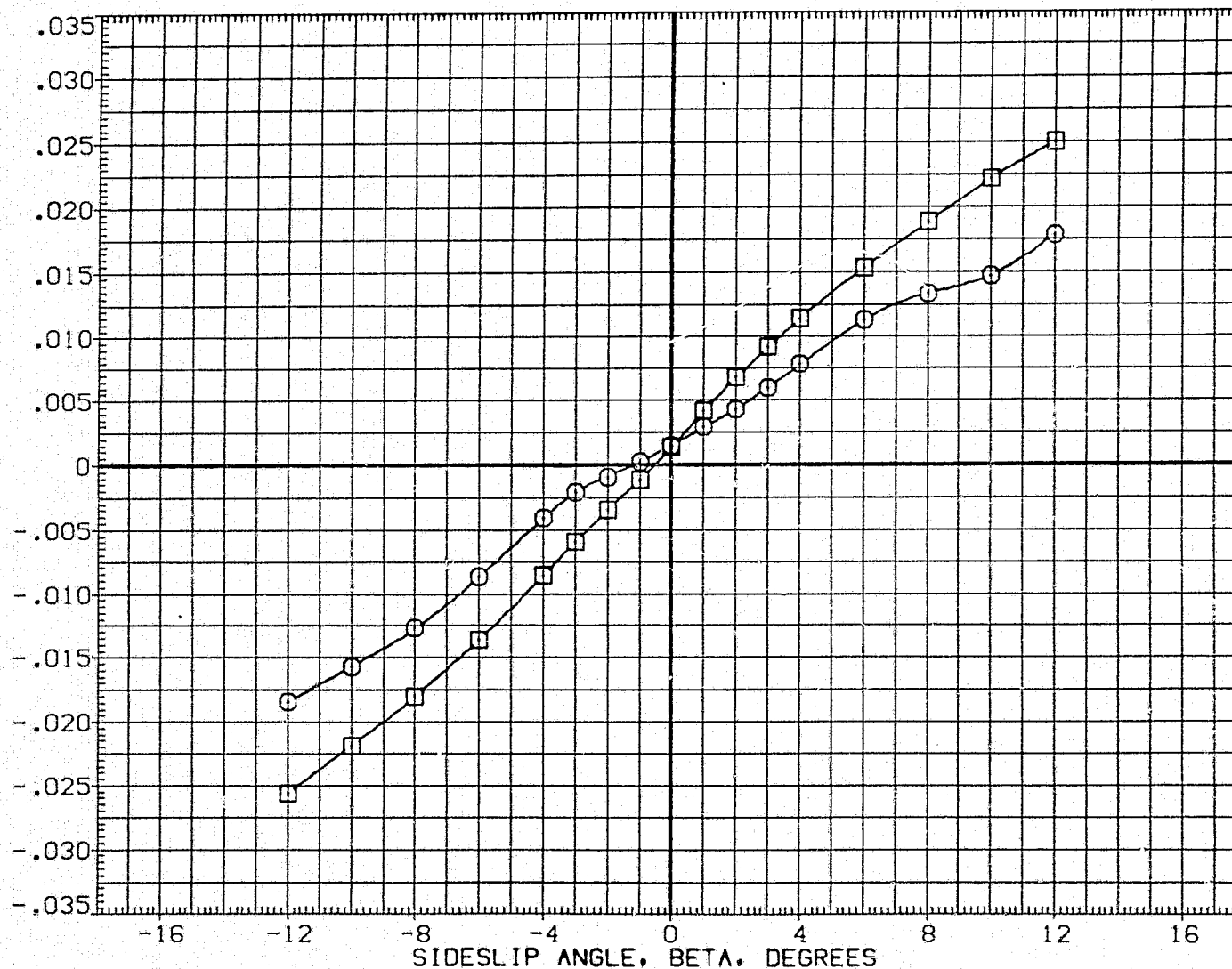


FIG. 258 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	S5-6	IORB	REFERENCE INFORMATION	
(RGM118)	□ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000 SQ.FT.
(RGM089)	○ CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	6.000	1.000	.000	7.850	LREF	327.8000 IN.
						BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

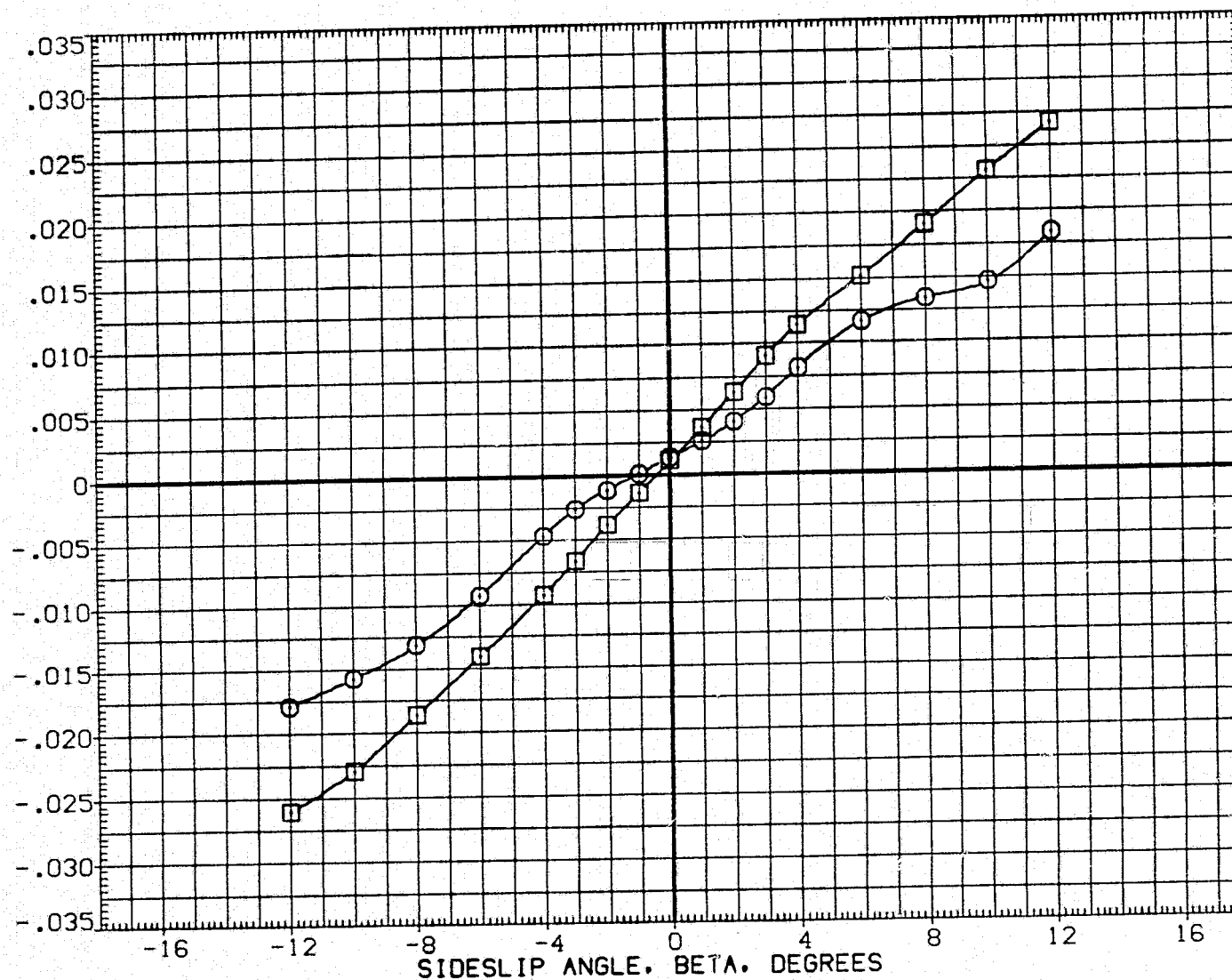


FIG. 258 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY  
(C)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM118)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM089)  $\square$  CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

ALPHA1 STAB SS-6 IORB  
 6.000 -2.000 .000 4.000  
 6.000 1.000 .000 7.850

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

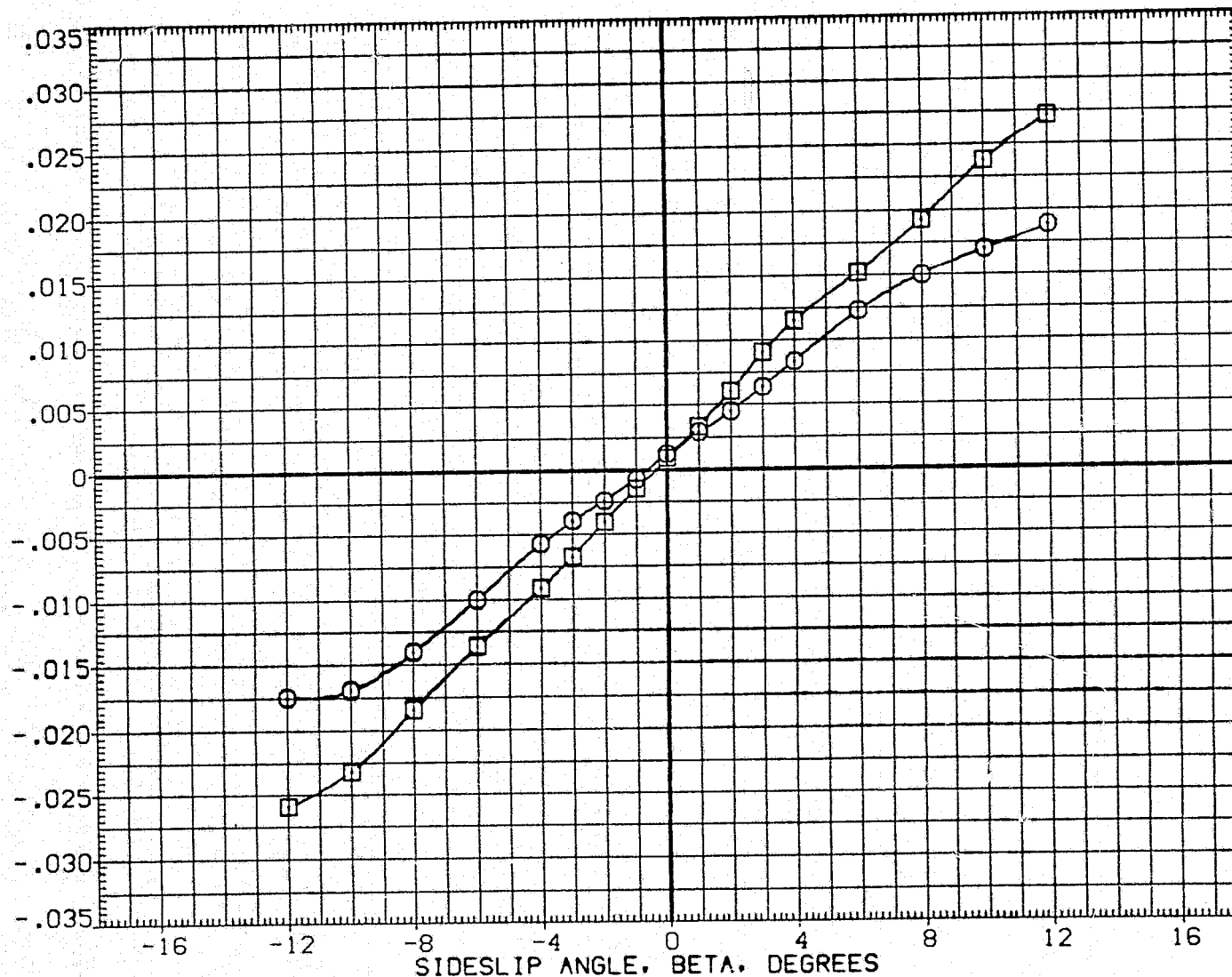


FIG. 258 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY

(CD)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	S5-6	10RB	REFERENCE INFORMATION	
(RGM118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000 SQ.FT.
(RGM089)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	.000	7.850	LREF	327.8000 IN.
						BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

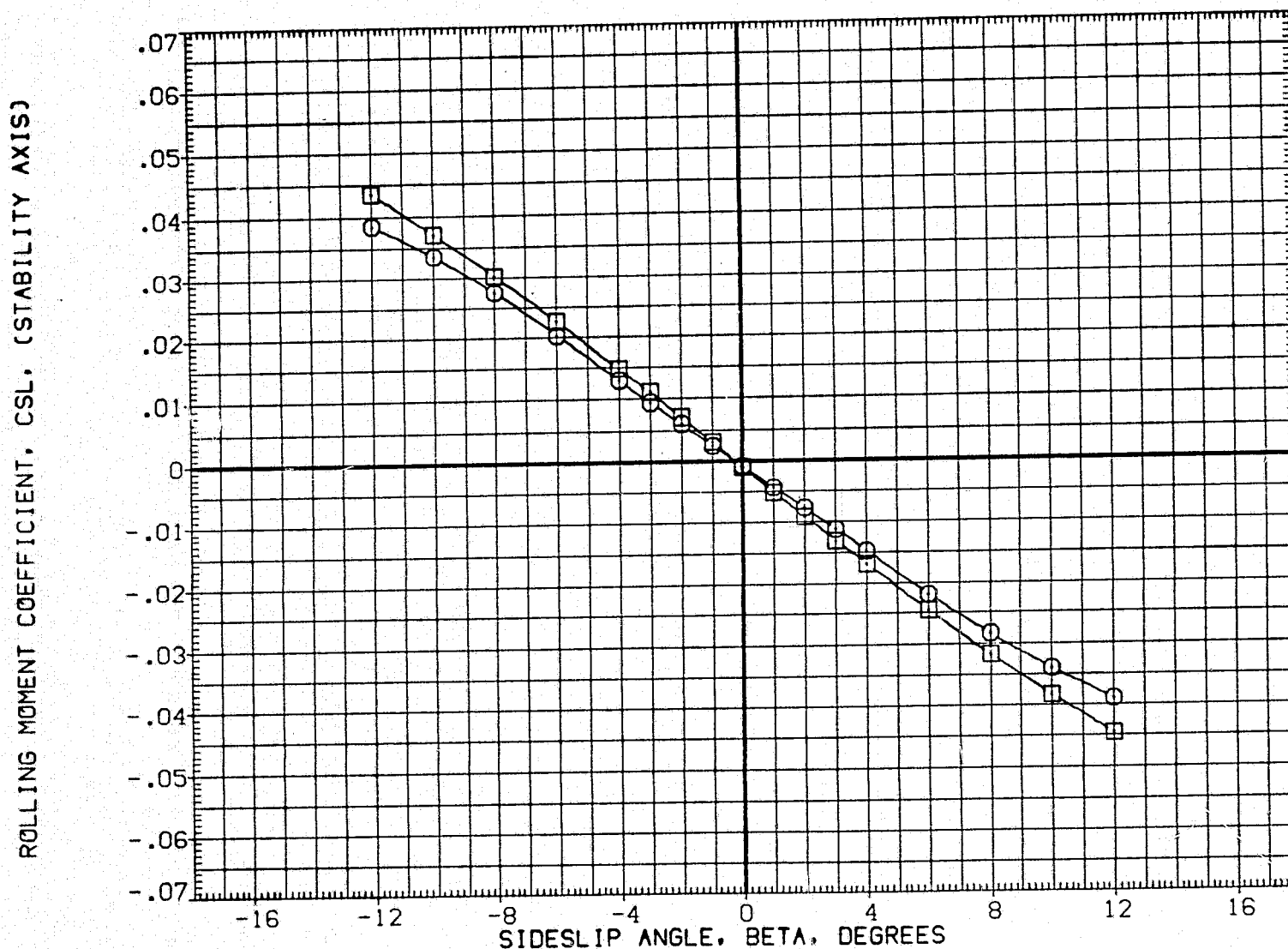


FIG. 258 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY

(A)MACH = .30



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (RGM118)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )  
 (RGM089)  $\square$  CAS KI FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )

ALPHA1 STAB SS-6 TORB  
 6.000 -2.000 .000 4.000  
 6.000 1.000 .000 7.850

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

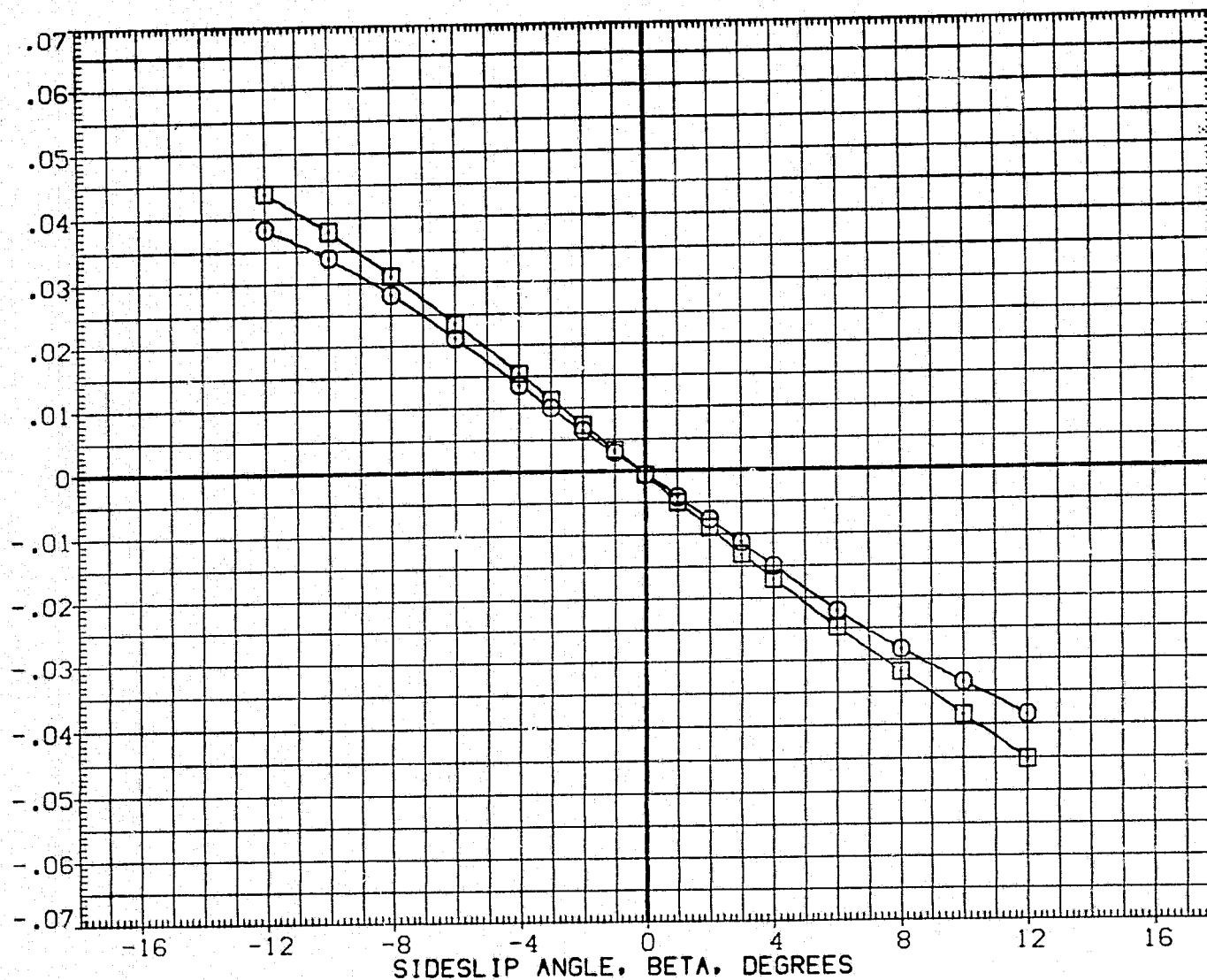


FIG. 258 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY

(B)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	S5-6	10RB	REFERENCE INFORMATION		
(RGM118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM089)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TCS AT38.2 )	6.000	1.000	.000	7.850	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

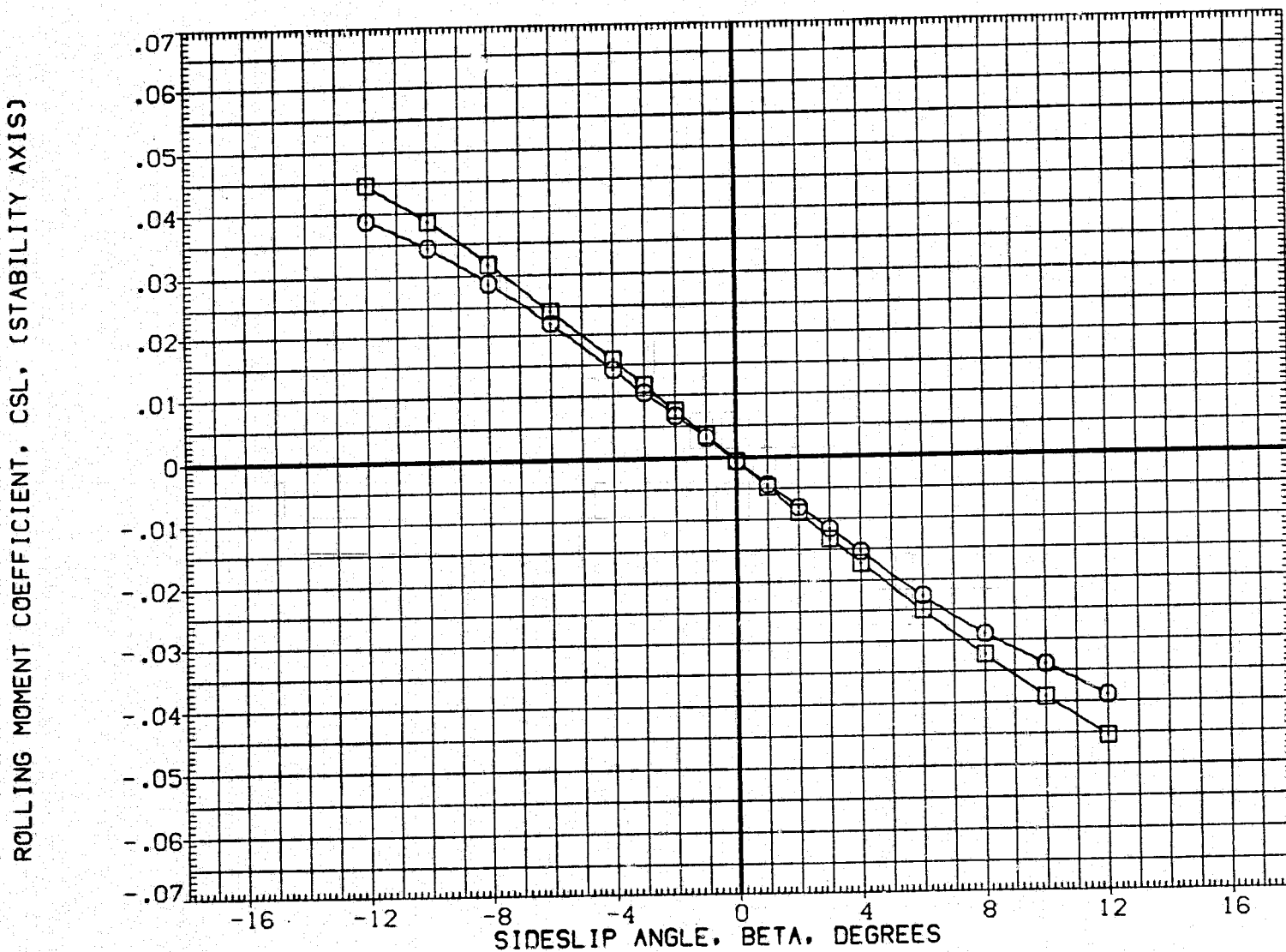


FIG. 258 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY  
(C)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	10RB	REFERENCE INFORMATION		
(RGM118)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.3 )	6.000	-2.000	.000	4.000	SREF	5500.0000	SQ.FT.
(RGM089)	CAS K1 FO H15.6 V9.1 (PLUS. ORB TC5 AT38.2 )	6.000	1.000	.000	7.850	LREF	327.8000	IN.
						GREF	2348.0000	IN.
						XM RP	1339.9100	IN. XC
						YM RP	.0000	IN. YC
						ZM RP	190.7500	IN. ZC
						SCALE	.0300	

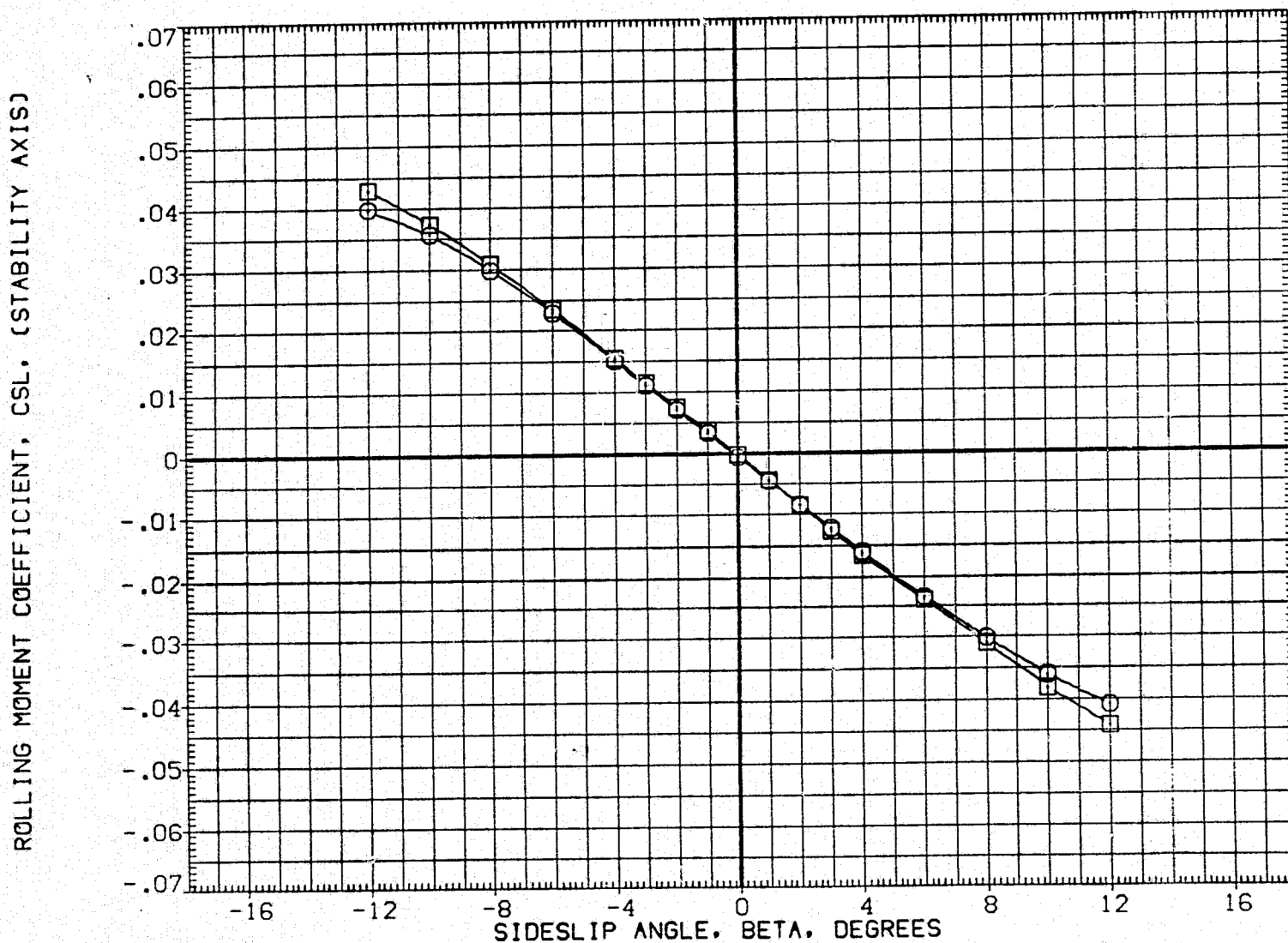


FIG. 258 747+ORB, EFFECT OF ORB INCIDENCE, FLAPS UP FERRY  
(D)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RGM078)	CAS K1 F20 H15.1A (PLUS. ORB TC5 AT38.1 )	1.000			45.000	SREF	5500.0000	50. FT.
(RGM067)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	.000	.000	45.000	LREF	327.8000	IN.
(RGM069)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	10.000	10.000	45.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

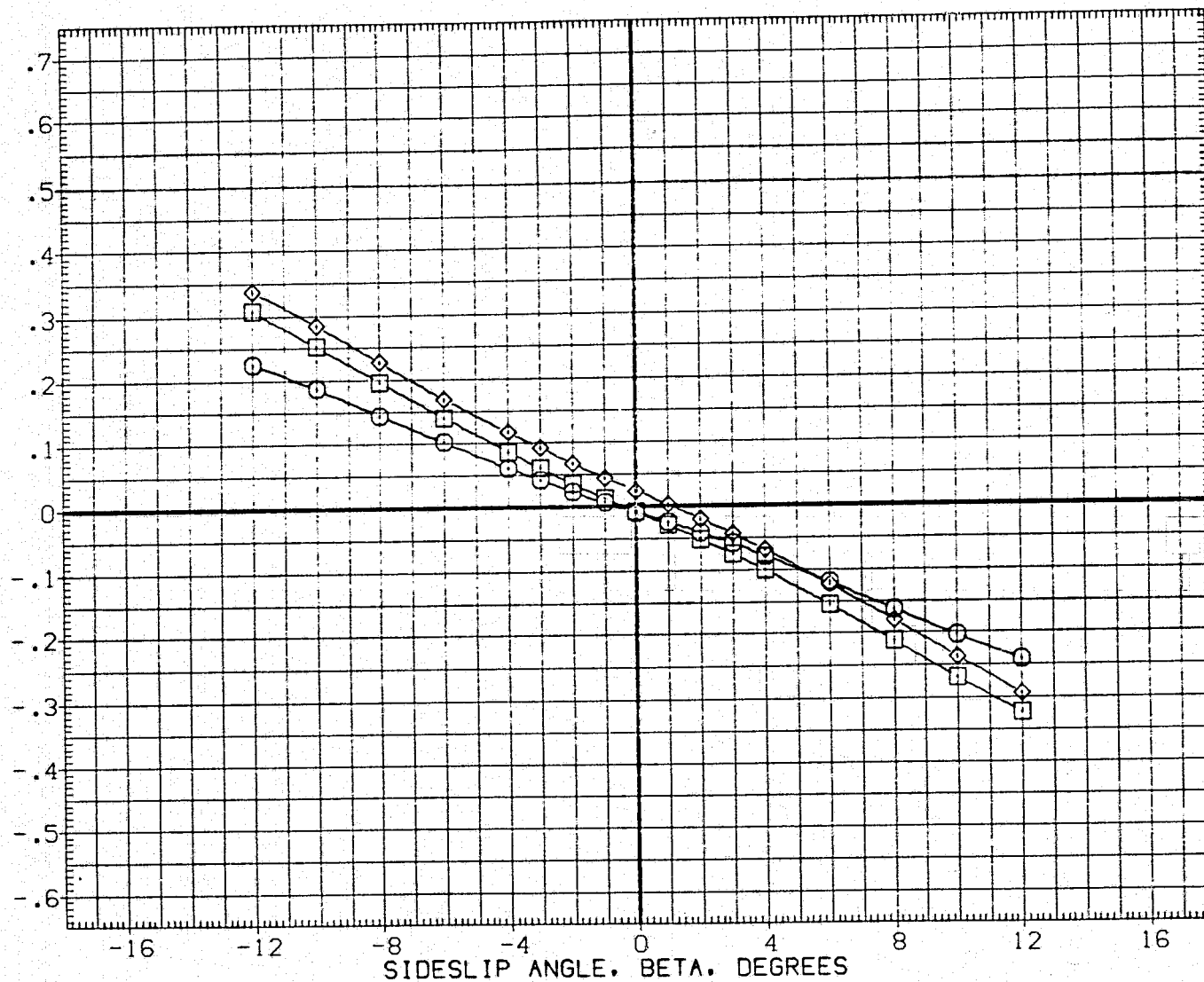


FIG. 259 747+ORB(10 DEG), RUDDER EFFECT, FLAPS 20 LAUNCH, ALPHA=6 DEG

(A)MACH = .50

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(RGM078)	CA5 KI F20 H15.1A (PLUS. ORB TC5 AT38.1)	1.000			45.000	SREF	5500.0000	SQ.FT.
(RGM067)	CA5 KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	.000	.000	45.000	LREF	327.8000	IN.
(RGM069)	CA5 KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	10.000	10.000	45.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

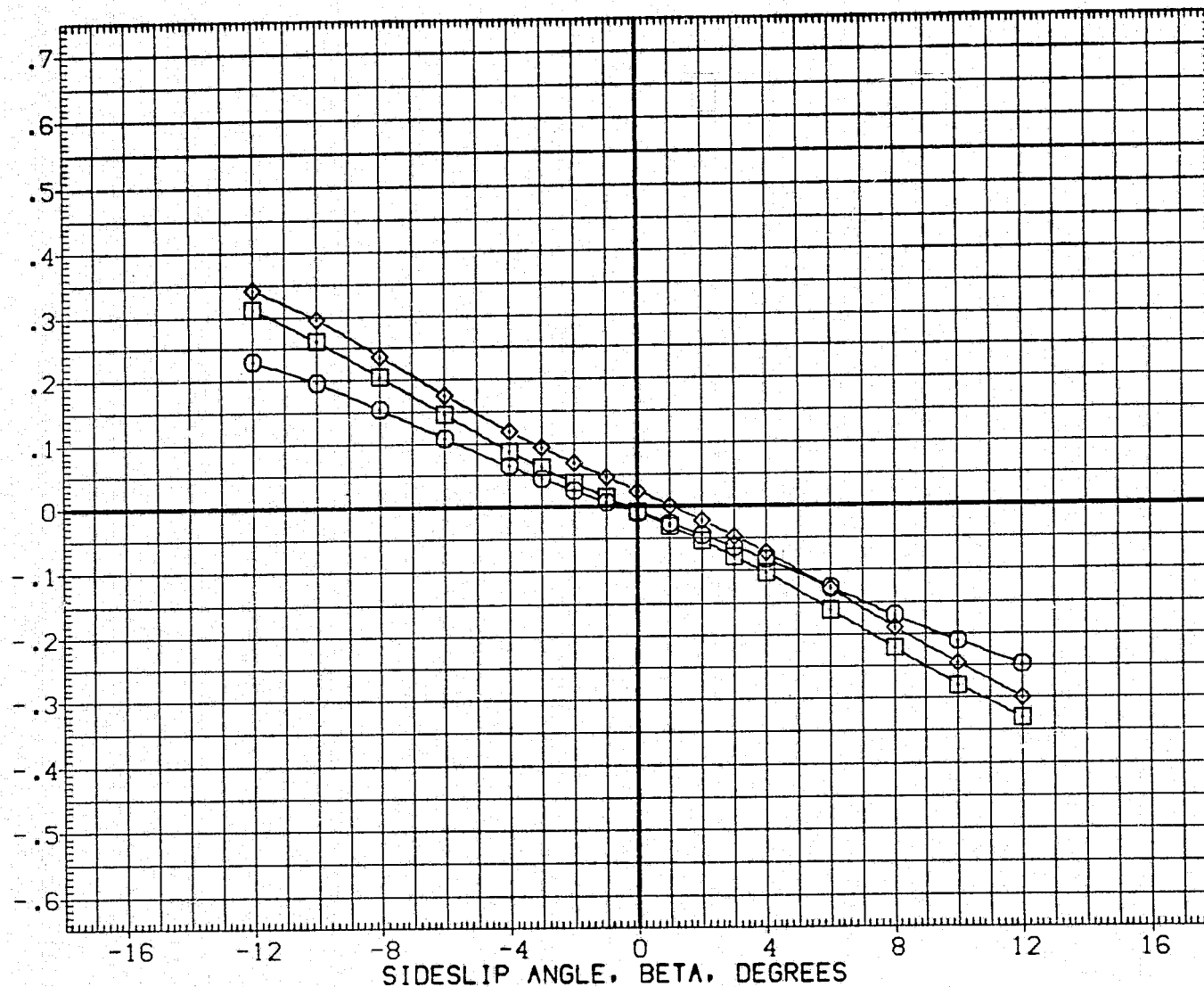


FIG. 259 747+ORB(10 DEG), RUDDER EFFECT, FLAPS 20 LAUNCH, ALPHA=6 DEG

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RGM078)	CAS K1 F20 H15.1A (PLUS. ORB TCS AT38.1 )	1.000			45.000	SREF	5500.0000	SQ.FT.
(RGM067)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	.000	.000	45.000	LREF	327.8000	IN.
(RGM069)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	10.000	10.000	45.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

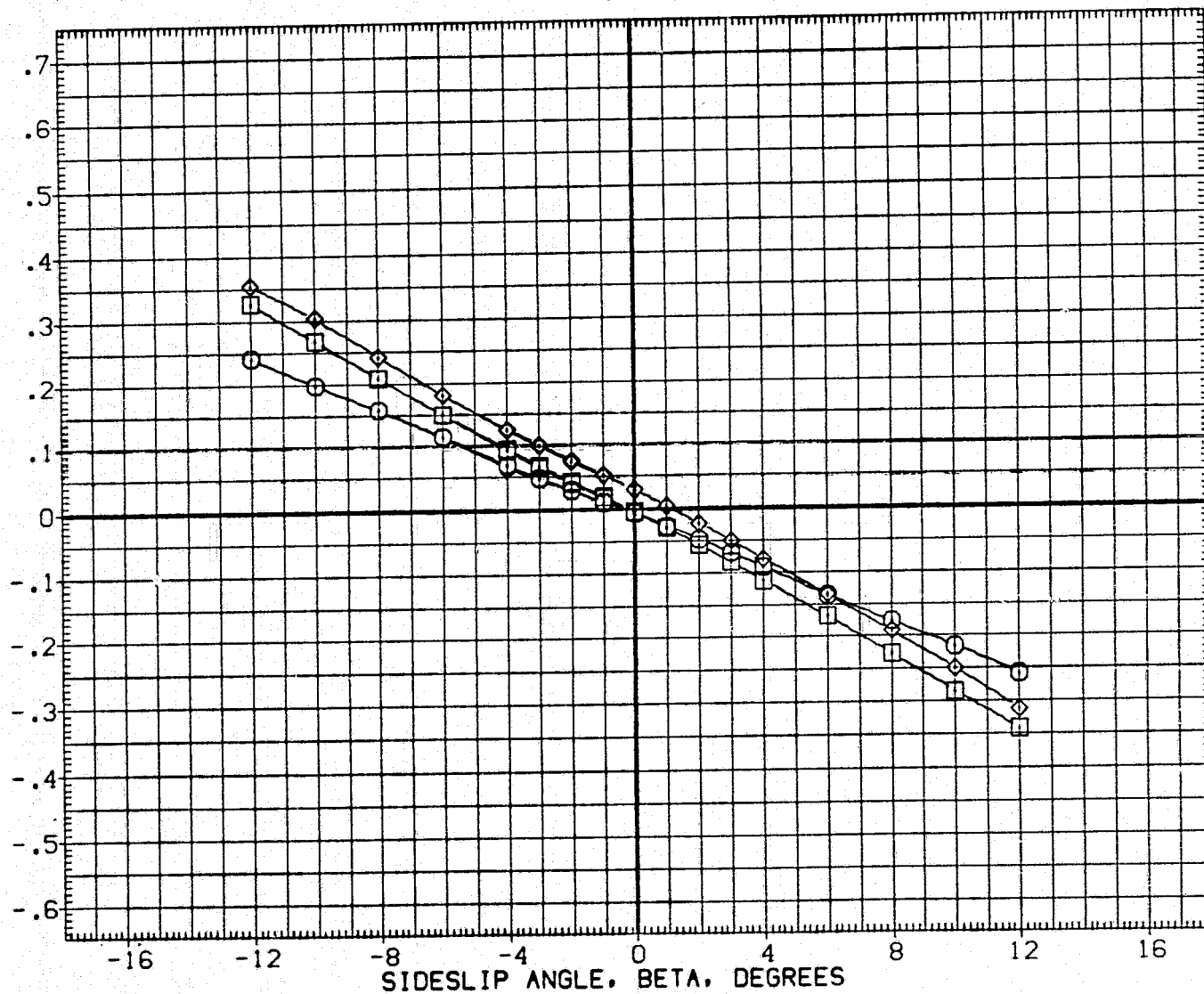


FIG. 259 747+ORB(10 DEG), RUDDER EFFECT, FLAPS 20 LAUNCH, ALPHA=6 DEG

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION	
(RGM078)	CA5 K1 F20 H15.1A (PLUS. ORB TC5 AT38.1)	1.000			45.000	SREF	5500.0000 SQ.FT.
(RGM067)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	.000	.000	45.000	LREF	327.8000 IN.
(RGM069)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	10.000	10.000	45.000	BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

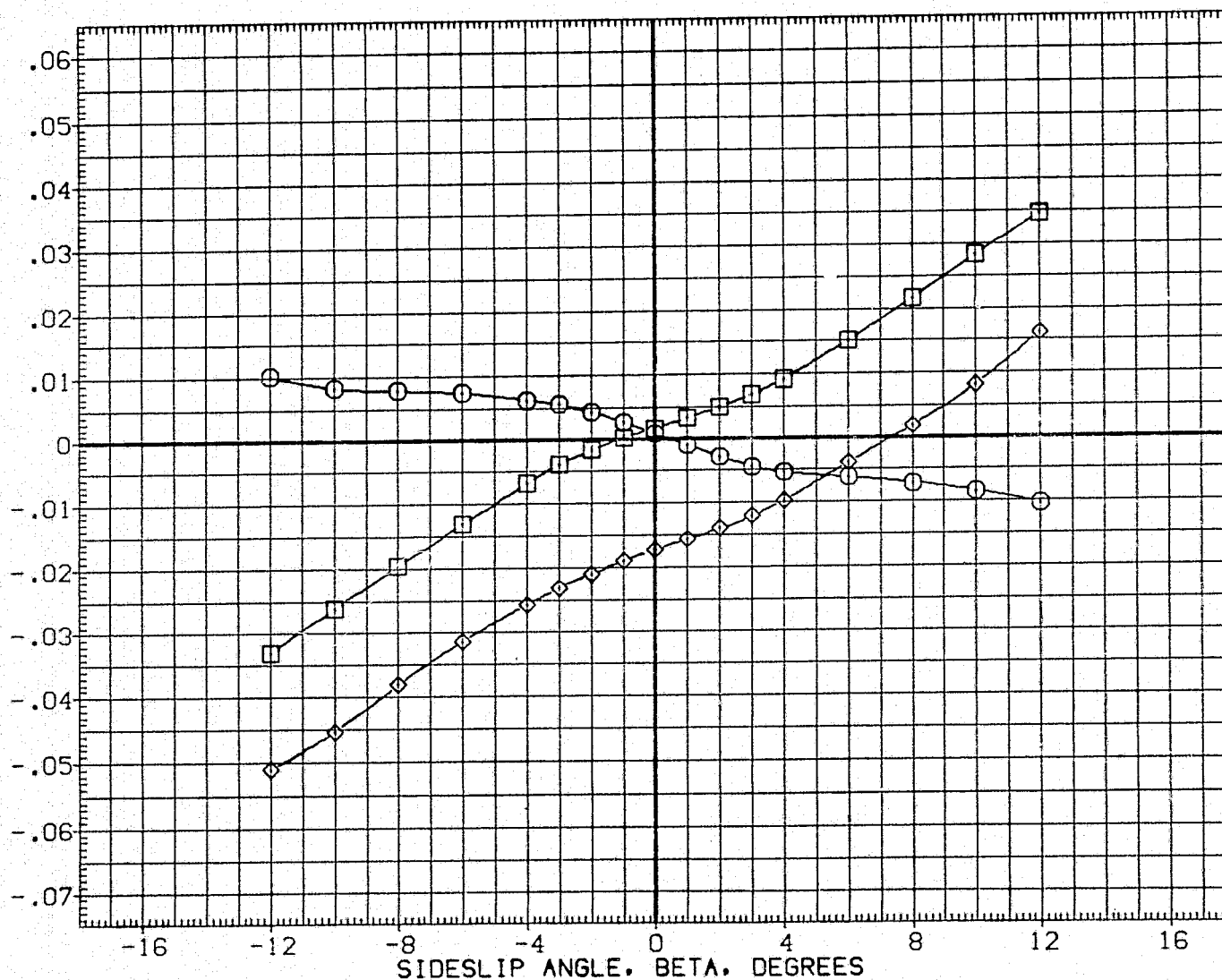


FIG. 259 747+ORB(10 DEG), RUDDER EFFECT, FLAPS 20 LAUNCH, ALPHA I=6 DEG

(A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	S5-6	REFERENCE INFORMATION		
(RGM078)	CAS K1 F20 H15.1A (PLUS. ORB TCS AT38.1)	1.000			45.000	SREF	5500.0000	SQ.FT.
(RGM067)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	1.000	.000	.000	45.000	LREF	327.8000	IN.
(RGM069)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	1.000	10.000	10.000	45.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

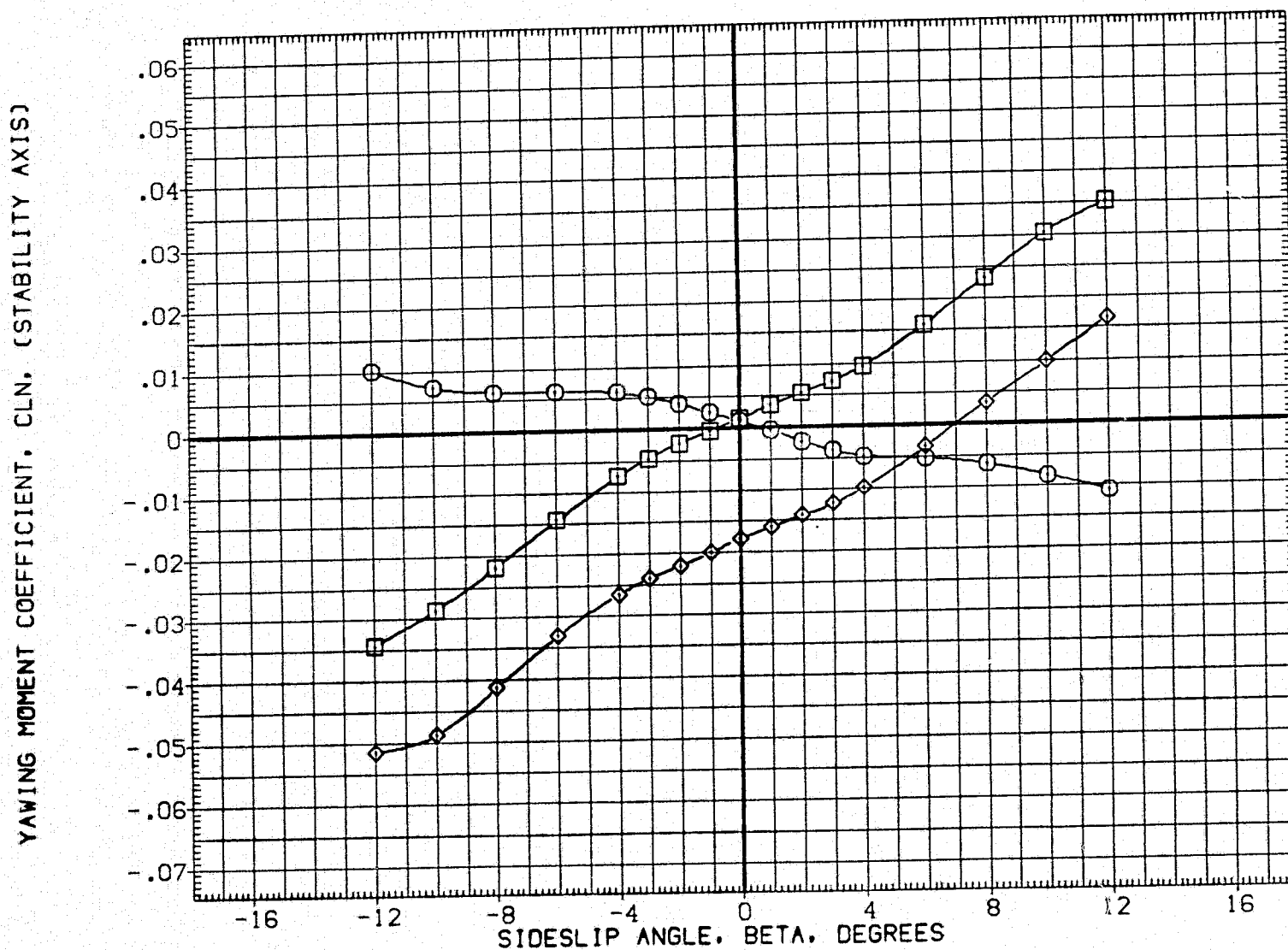


FIG. 259 747+ORB(10 DEG), RUDDER EFFECT, FLAPS 20 LAUNCH, ALPHA1=6 DEG  
(B)MACH = .60



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RGM078)	CAS K1 F20 H15.1A (PLUS. ORB TC5 AT38.1 )	1.000			45.000	SREF	5500.0000	SQ.FT.
(RGM067)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	.000	.000	45.000	LREF	327.8000	IN.
(RGM069)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	10.000	10.000	45.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

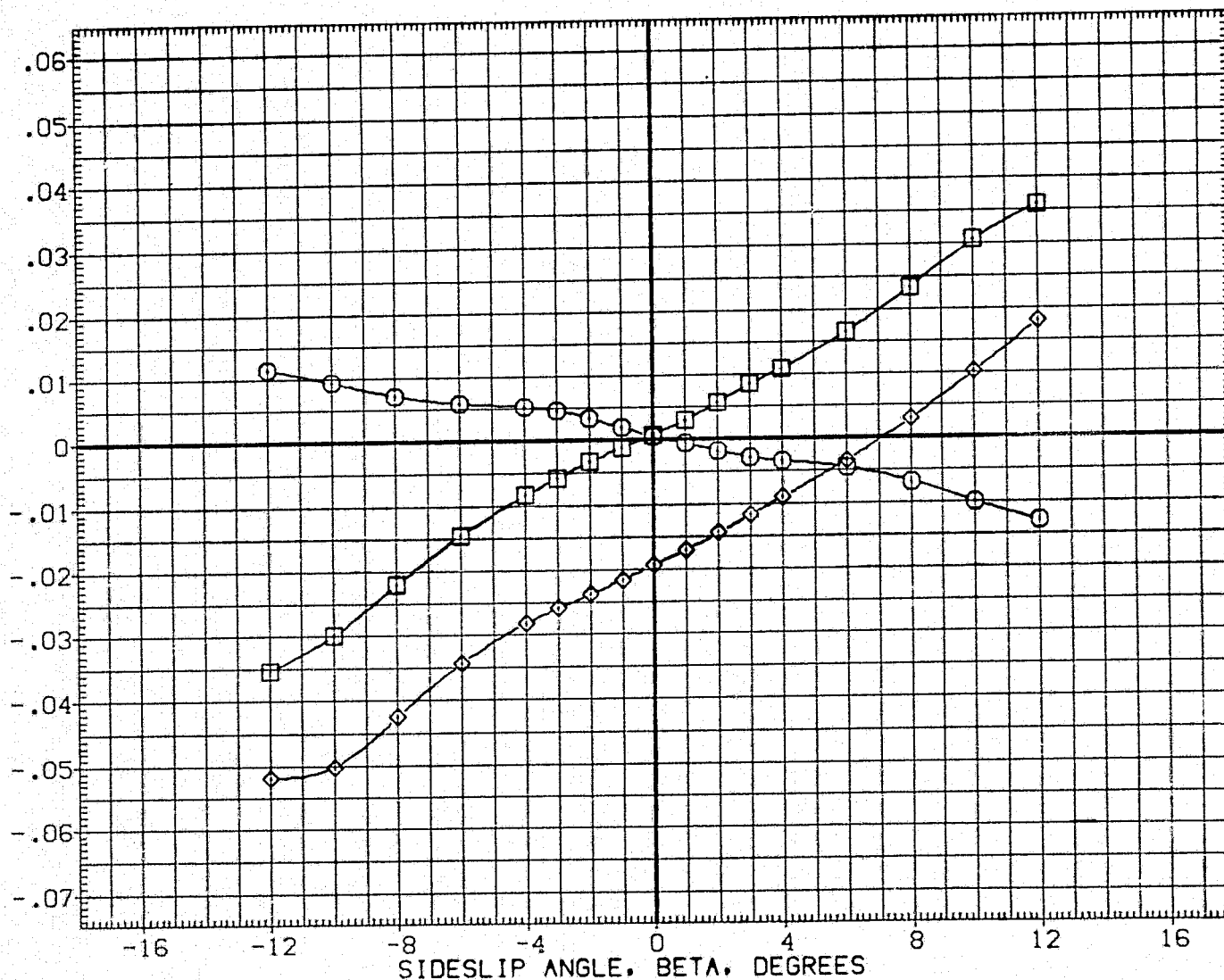


FIG. 259 747+ORB(10 DEG), RUDDER EFFECT, FLAPS 20 LAUNCH, ALPHA=6 DEG

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RGMO78)	CAS K1 F20 H15.1A (PLUS. ORB TCS AT38.1 )	1.000			45.000	SREF	5500.0000	SQ.FT.
(RGMO67)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	.000	.000	45.000	LREF	327.8000	IN.
(RGMO69)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1 )	1.000	10.000	10.000	45.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

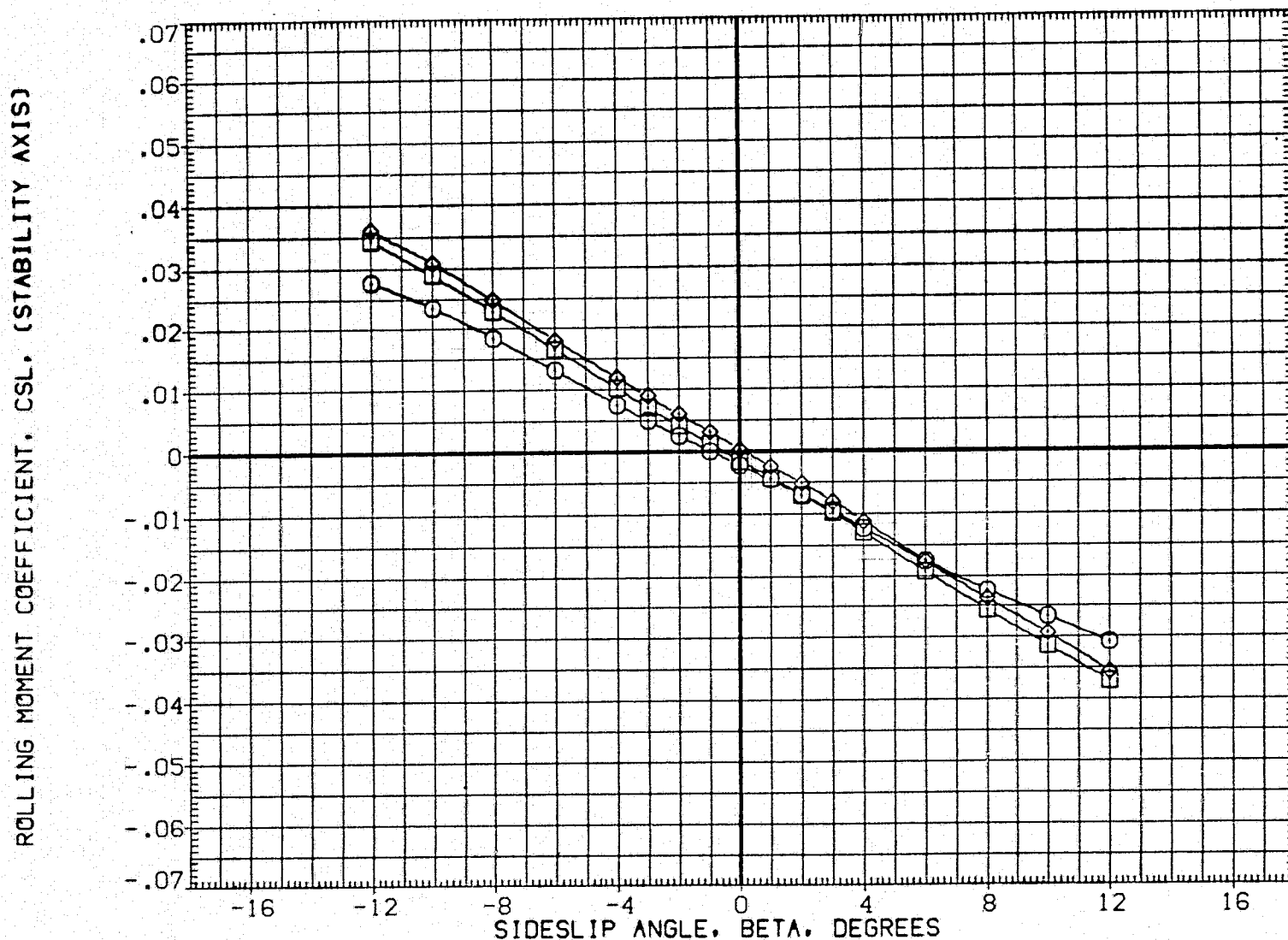


FIG. 259 747+ORB(10 DEG), RUDDER EFFECT, FLAPS 20 LAUNCH, ALPHA=6 DEG

(A) MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION	
(RGM078)	CAS KI F20 H15.1A (PLUS. ORB TC5 AT38.1 )	1.000			45.000	SREF	5500.0000 SQ.FT.
(RGM067)	CAS KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	.000	.000	45.000	LREF	327.8000 IN.
(RGM069)	CAS KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	1.000	10.000	10.000	45.000	BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

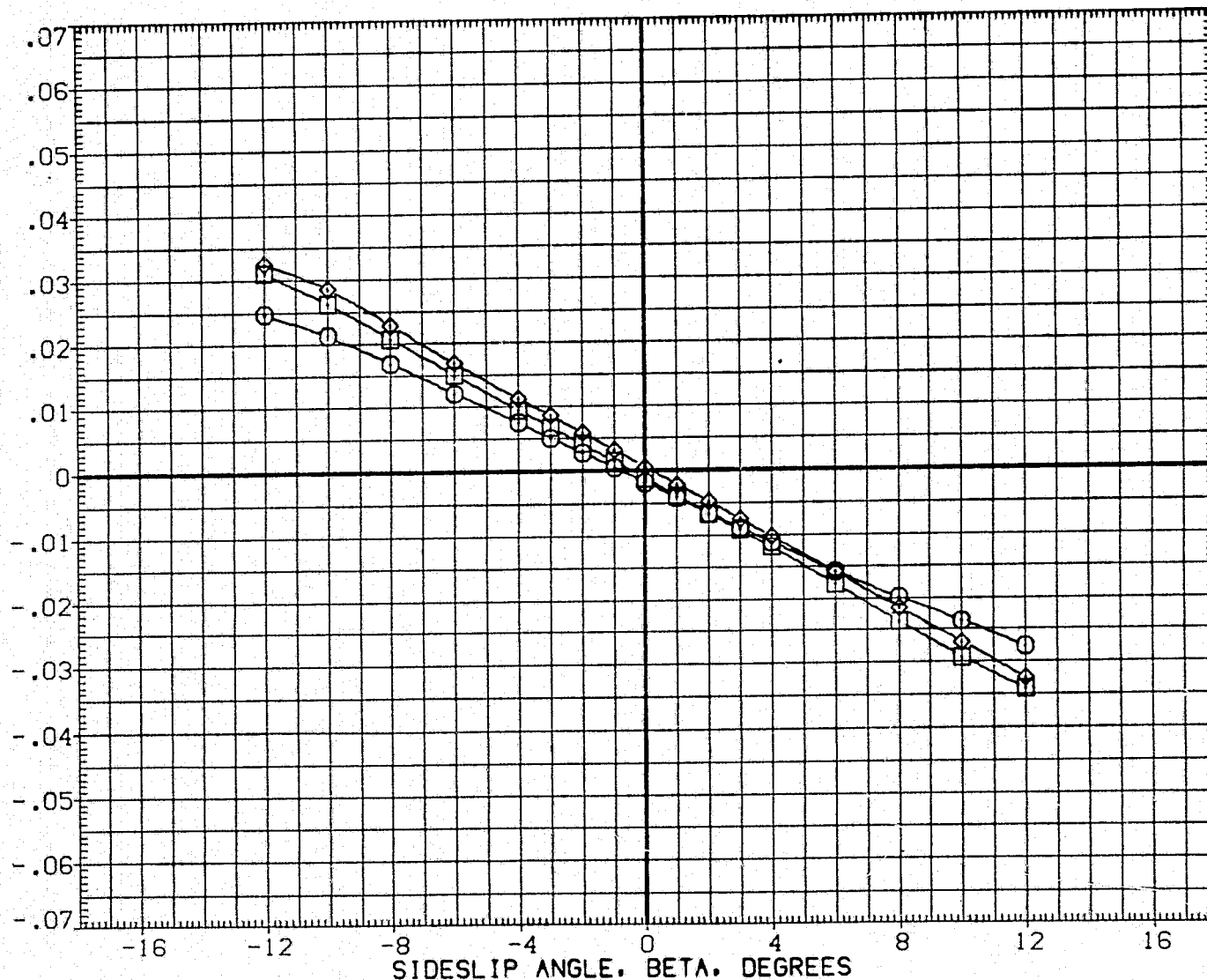


FIG. 259 747+ORB(10 DEG), RUDDER EFFECT, FLAPS 20 LAUNCH, ALPHA=6 DEG

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	STAB	RUD-U	RUD-L	SS-6	REFERENCE INFORMATION		
(RGM078)	CAS K1 F20 H15.1A (PLUS. ORB TC5 AT38.1)	1.000			45.000	SREF	5500.0000	SQ.FT.
(RGM067)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	.000	.000	45.000	LREF	327.8000	IN.
(RGM069)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	1.000	10.000	10.000	45.000	BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

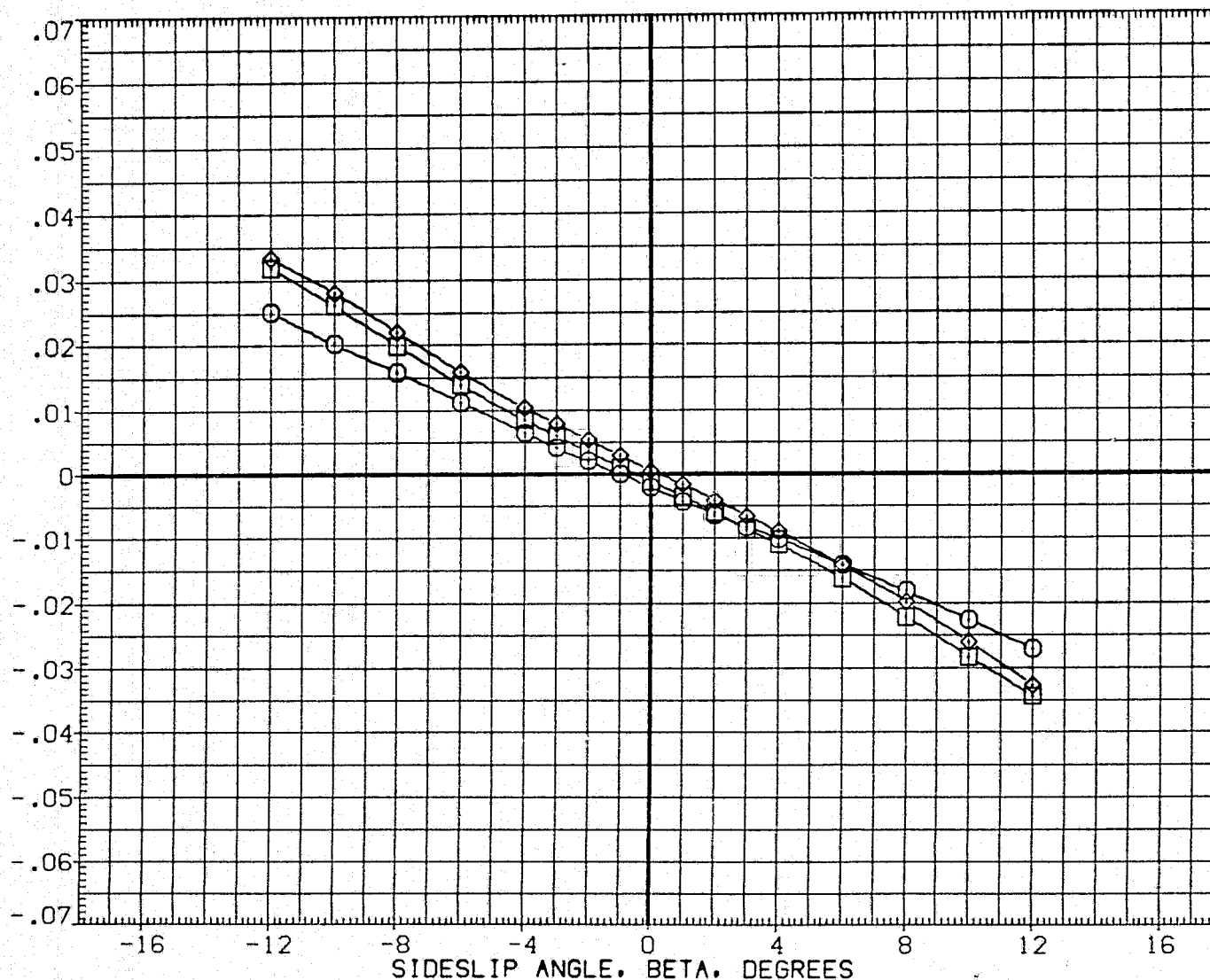


FIG. 259 747+ORB(10 DEG), RUDDER EFFECT, FLAPS 20 LAUNCH, ALPHA1=6 DEG

(C)MACH = .70

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION
(RGM073)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	6.000	1.000	.000	9.700	SREF 5500.0000 SQ.FT.
(RGM067)	CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	6.000	1.000	45.000	9.700	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

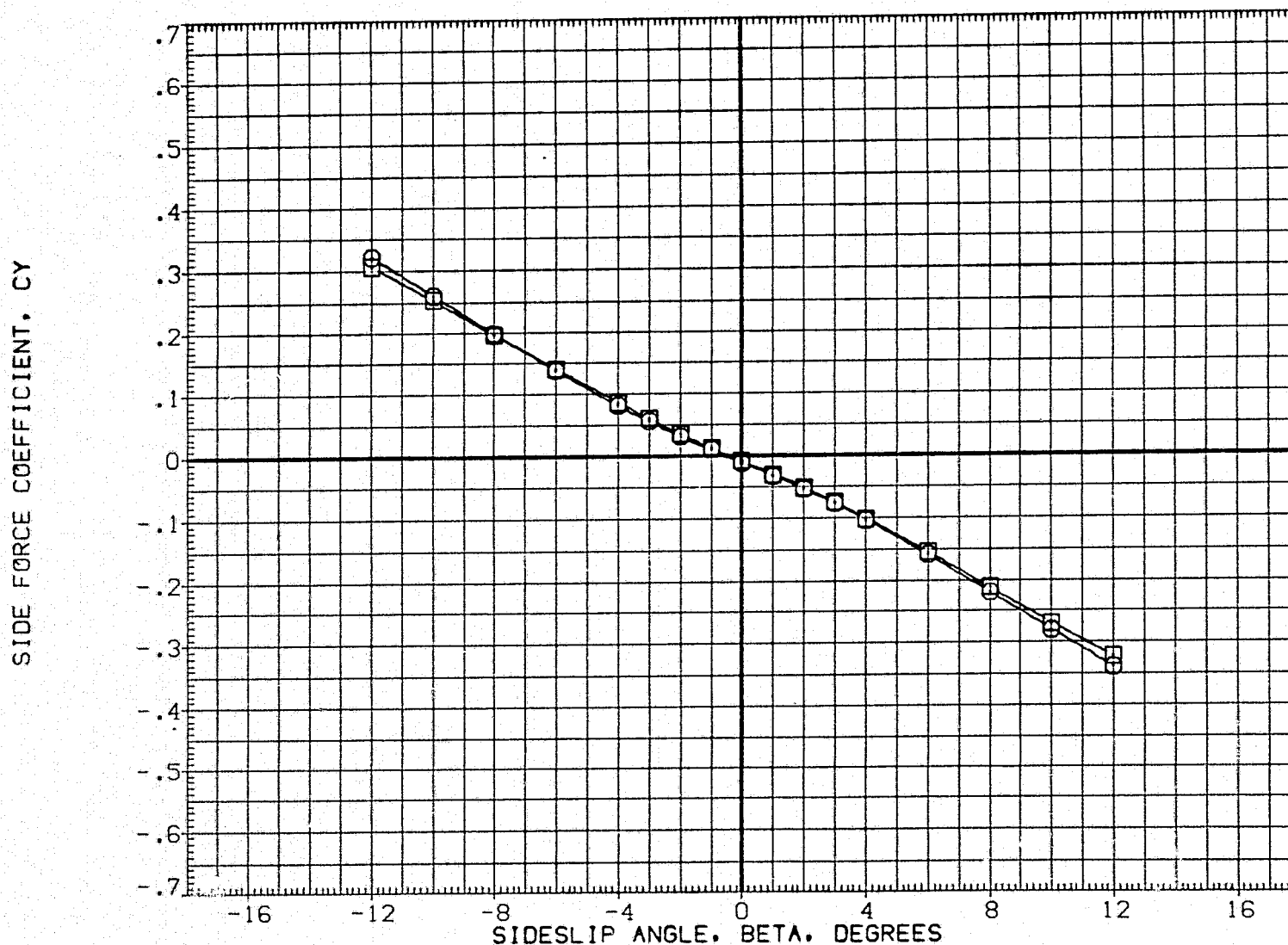


FIG. 260 747+ORB(10 DEG), EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM073)  $\square$  CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM067)  $\square$  CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

ALPHA1

STAB

S5-6

10RB

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

SIDE FORCE COEFFICIENT, CY

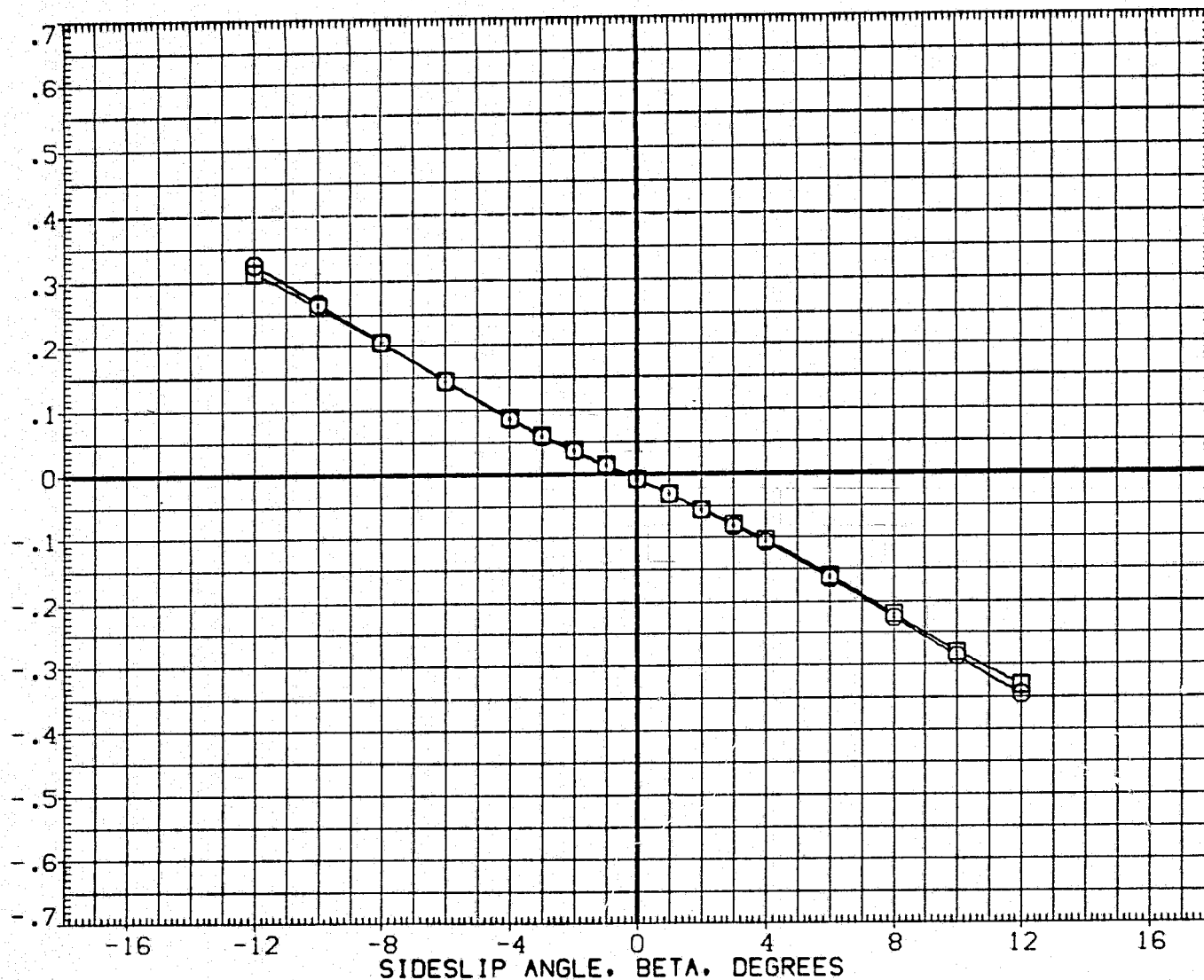


FIG. 260 747+ORB(10 DEG), EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	S5-6	10RB	REFERENCE INFORMATION	
(RGM073)	CA5 KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	6.000	1.000	.000	9.700	SREF	5500.0000 SQ.FT.
(RGM067)	CA5 KI F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	6.000	1.000	45.000	9.700	LREF	327.8000 IN.
						BREF	2348.0000 IN.
						XMRP	1339.9100 IN. XC
						YMRP	.0000 IN. YC
						ZMRP	190.7500 IN. ZC
						SCALE	.0300

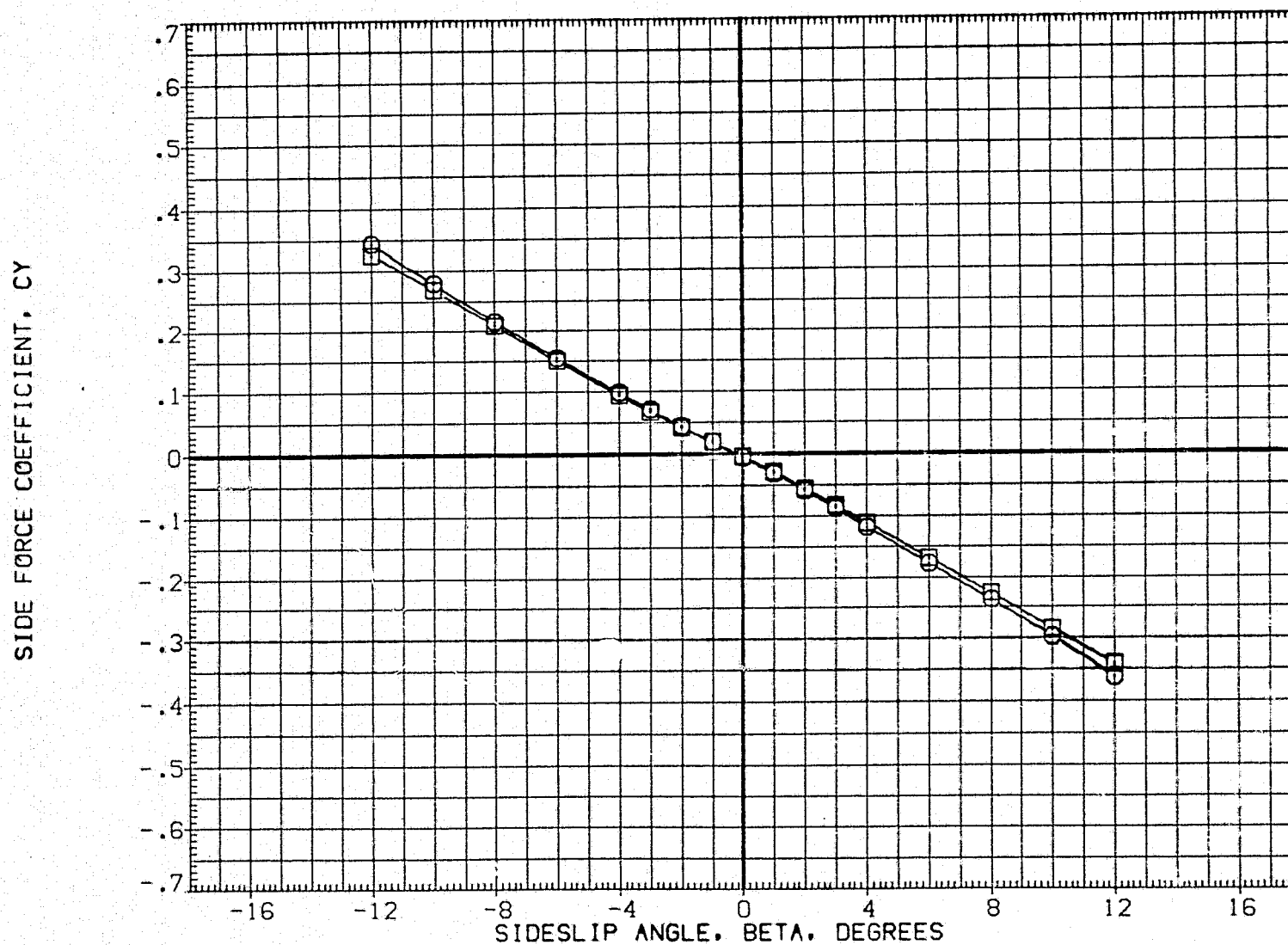


FIG. 260 747+ORB(10 DEG), EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(C)MACH = .70

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	S5-6	10RB	REFERENCE INFORMATION		
(RGM073)	○ CAS K1 F20 H15.6 V9.1 (PLUS. 0RB TCS AT38.1 )	6.000	1.000	.000	9.700	SREF	5500.0000	SQ. FT.
(RGM067)	□ CAS K1 F20 H15.6 V9.1 (PLUS. 0RB TCS AT38.1 )	6.000	1.000	45.500	9.700	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRF	1339.9100	IN. XC
						YMRF	.0000	IN. YC
						ZMRF	190.7500	IN. ZC
						SCALE	.0300	

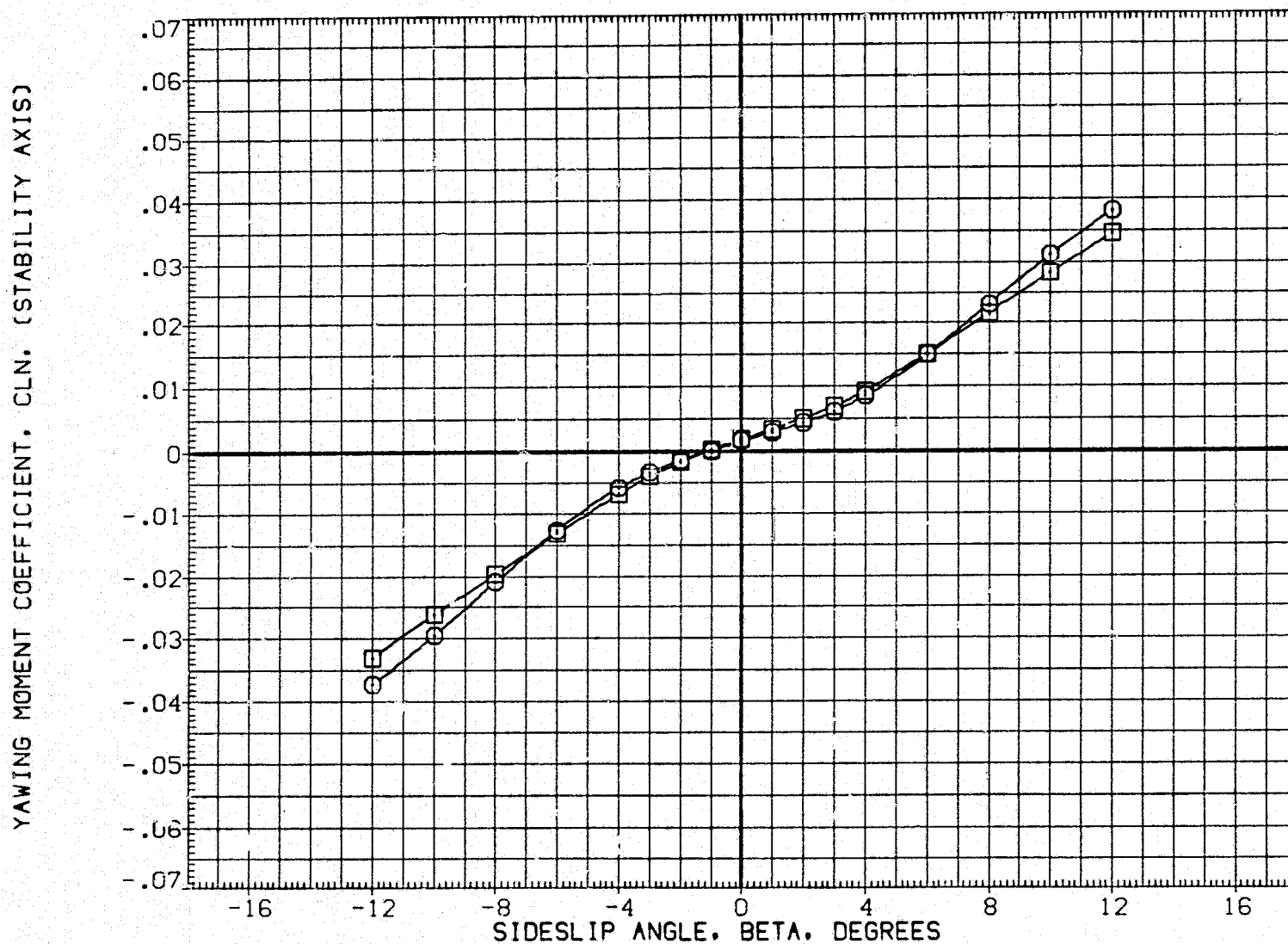


FIG. 260 747+0RB(10 DEG), EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20  
(A)MACH = .50



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	SS-6	IORB	REFERENCE INFORMATION		
(RGM073)	□ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	6.000	1.000	.000	9.700	SREF	5500.0000	50.FT.
(RGM067)	○ CAS K1 F20 H15.6 V9.1 (PLUS. ORB TCS AT38.1)	6.000	1.000	45.000	9.700	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

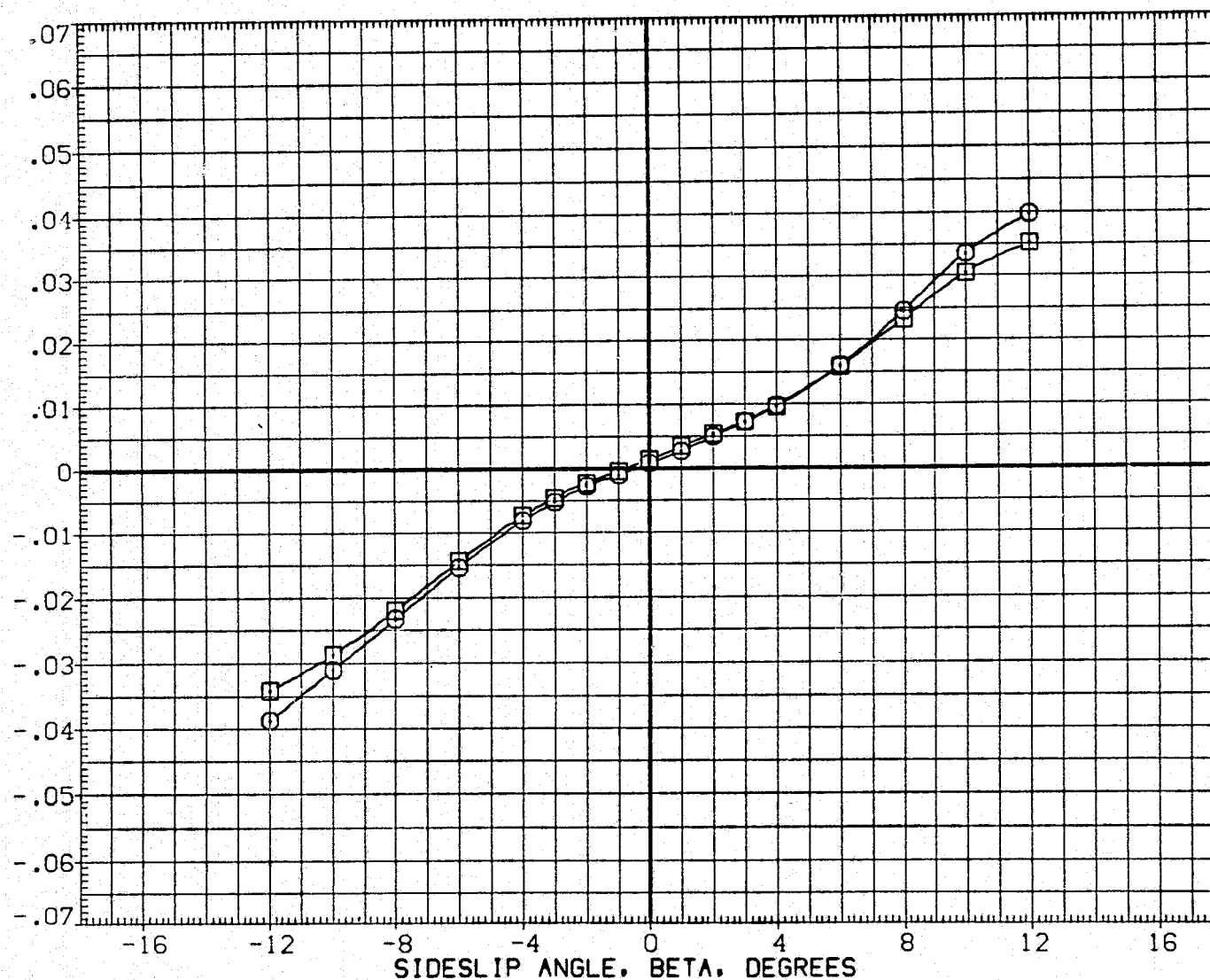


FIG. 260 747+ORB(10 DEG), EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20  
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	SS-6	IORB	REFERENCE INFORMATION
(RGM073)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	6.000	1.000	.000	9.700	SREF 5500.0000 SQ.FT.
(RGM067)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1)	6.000	1.000	45.000	9.700	LREF 327.8000 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0300

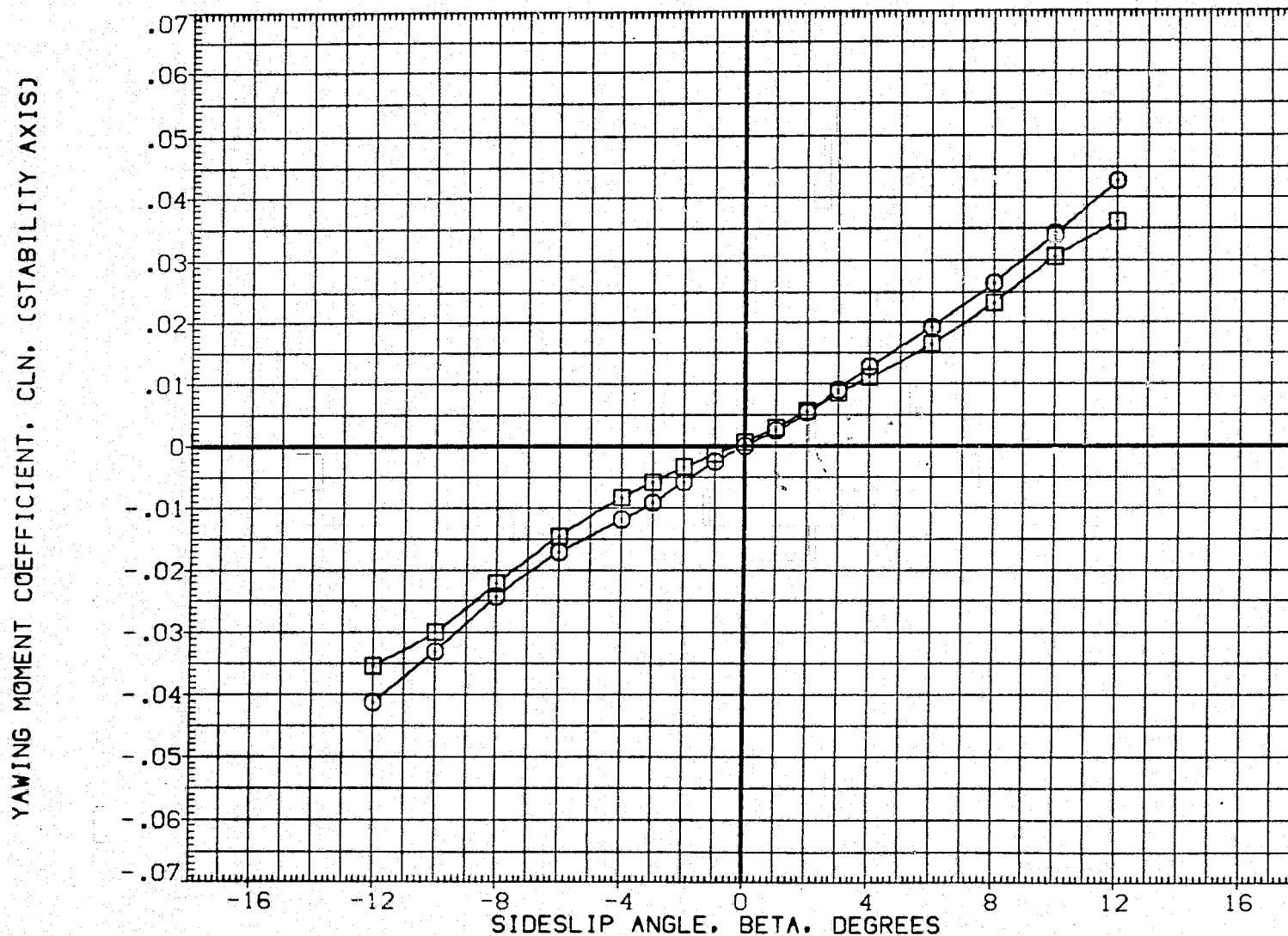


FIG. 260 747+ORB(10 DEG), EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20  
(C)MACH = .70

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM073)  $\bigcirc$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM067)  $\square$  CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

ALPHA1 STAB S5-6 10RB  
 6.000 1.000 .000 9.700  
 6.000 1.000 45.000 9.700

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

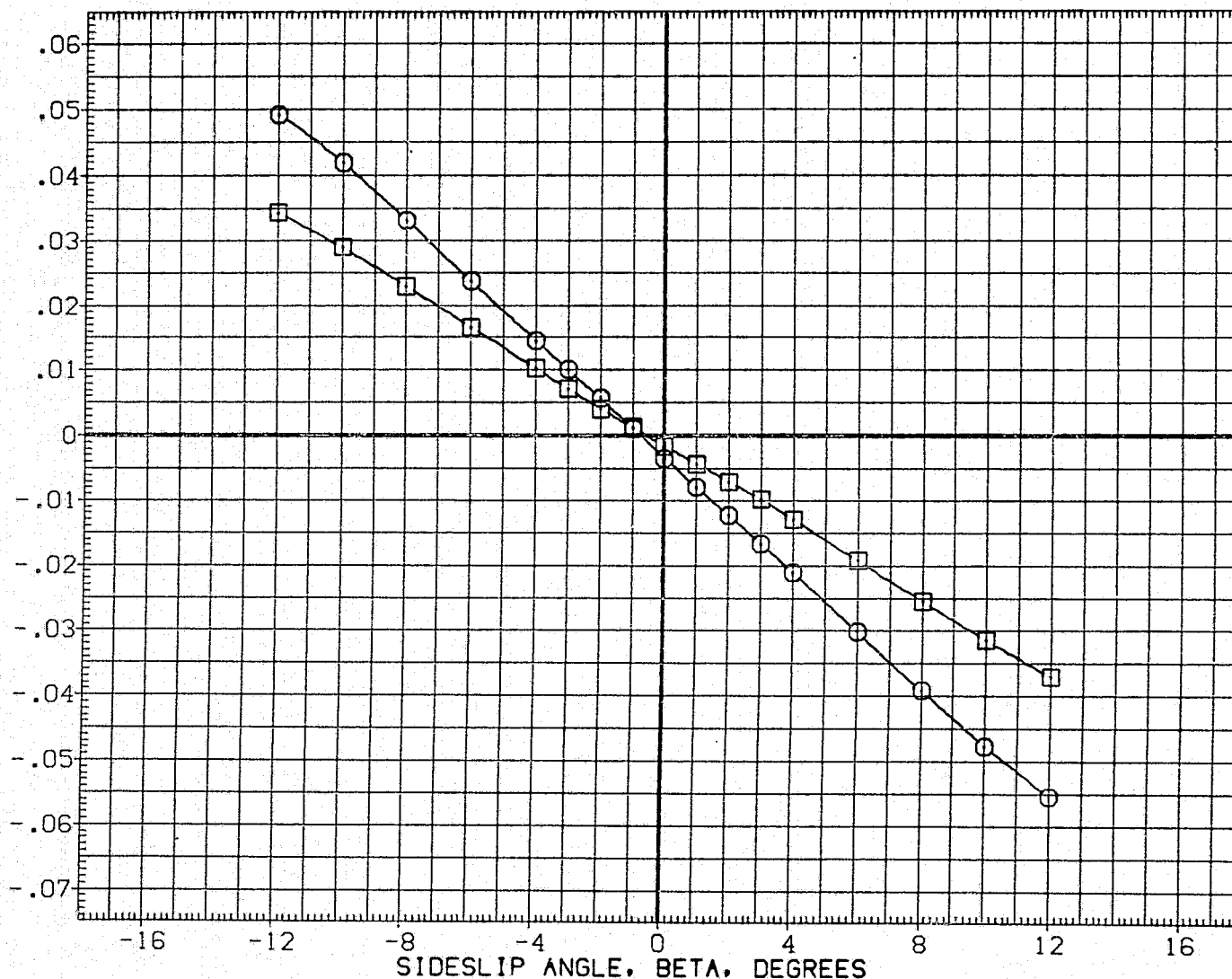


FIG. 260 747+ORB(10 DEG), EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20  
 (A)MACH = .50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA1	STAB	S5-6	10RB	REFERENCE INFORMATION		
(RGMO73)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	6.000	1.000	.000	9.700	SREF	5500.0000	SQ.FT.
(RGMO67)	CAS K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )	6.000	1.000	45.000	9.700	LREF	327.8000	IN.
						BREF	2348.0000	IN.
						XMRP	1339.9100	IN. XC
						YMRP	.0000	IN. YC
						ZMRP	190.7500	IN. ZC
						SCALE	.0300	

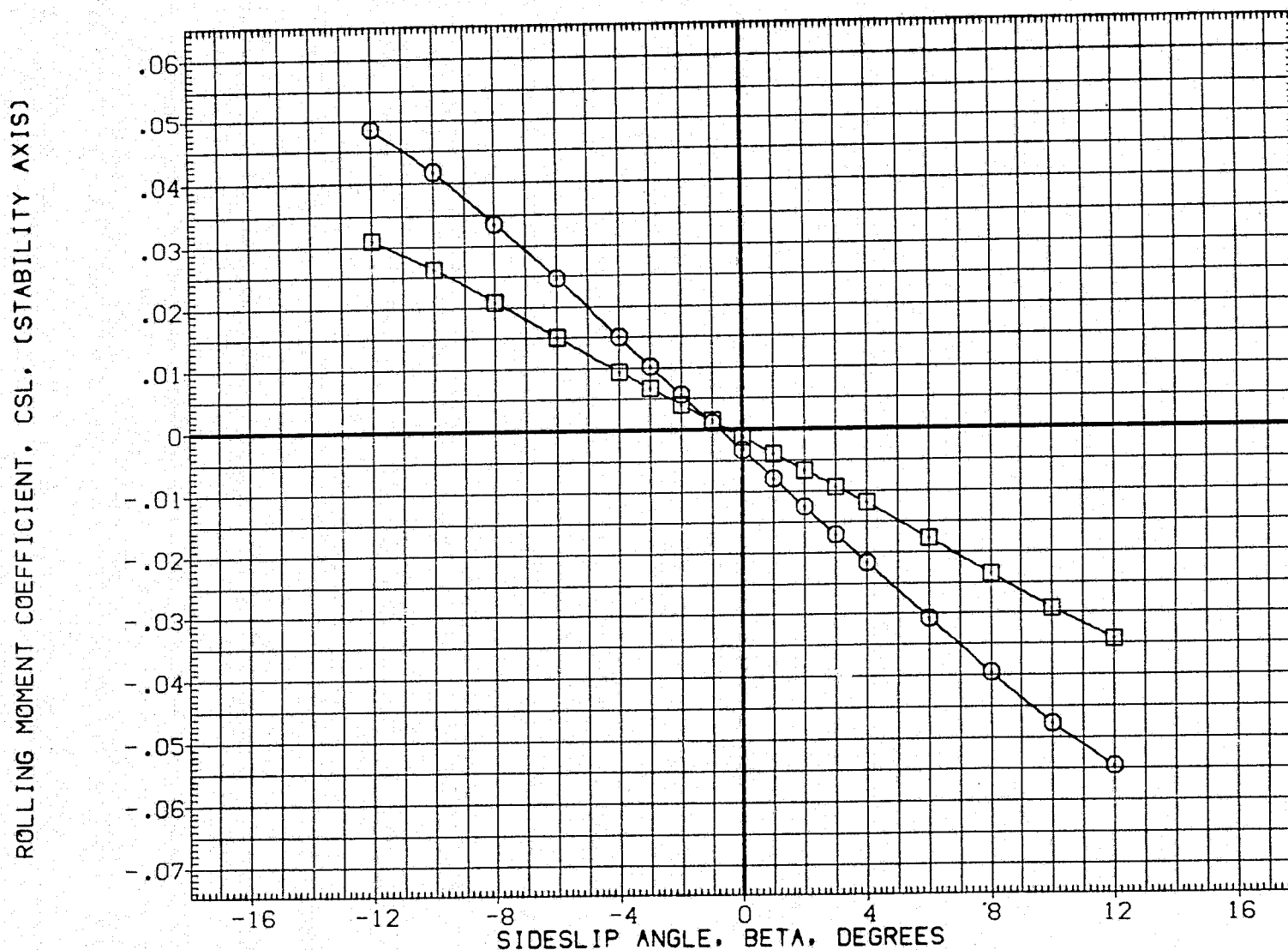


FIG. 260 747+ORB(10 DEG), EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RGM073)  $\square$  CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )  
 (RGM067)  $\square$  CA5 K1 F20 H15.6 V9.1 (PLUS. ORB TC5 AT38.1 )

ALPHA1

STAB

S5-6

10RB

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.  
 LREF 327.8000 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0300

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

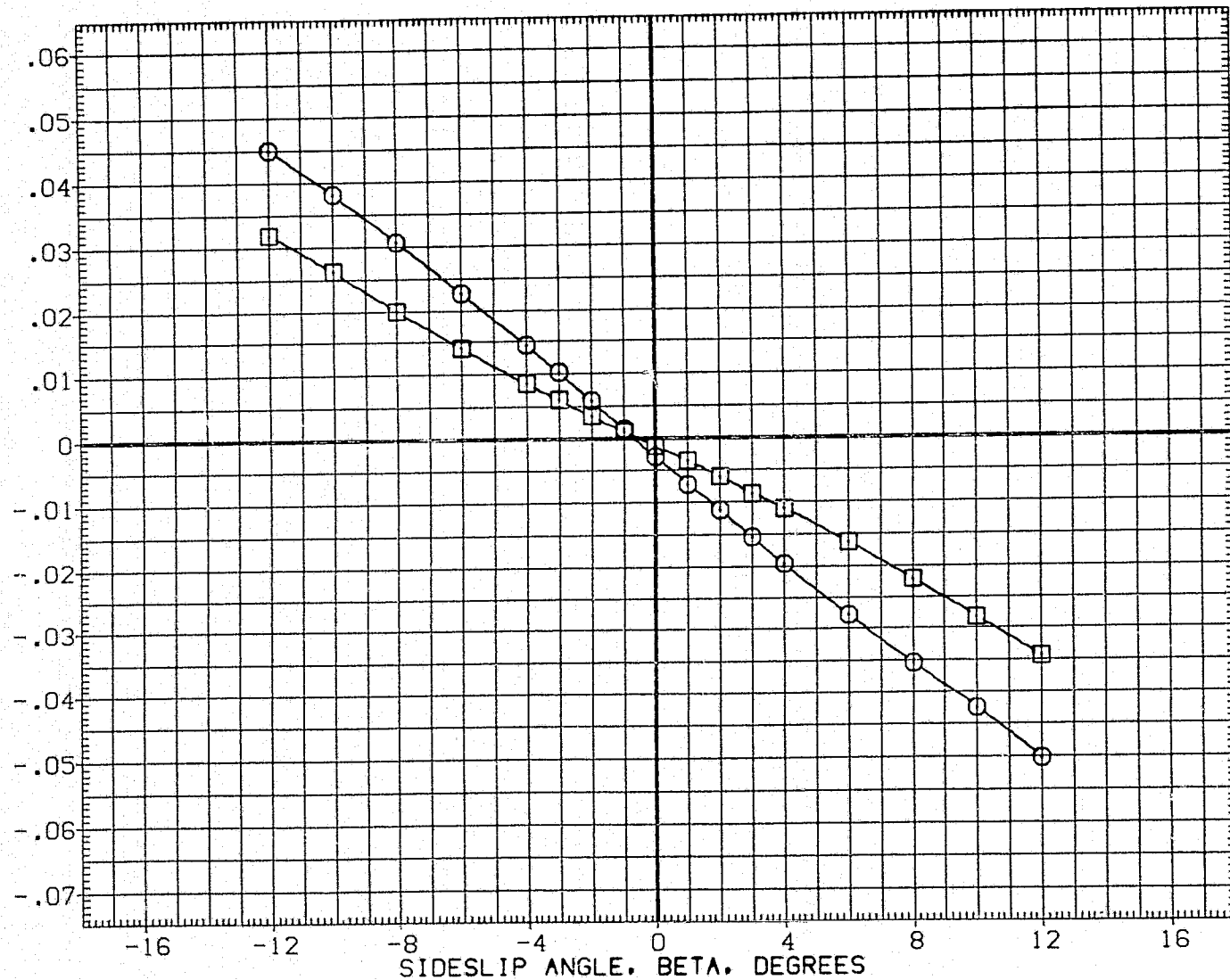


FIG. 260 747+ORB(10 DEG), EFFECT OF FULL 45 DEG SPOILERS, FLAPS 20

(C)MACH = .70